



BRIDGEWATER STATE COLLEGE

1970/1971 CATALOG

The Commonwealth of Massachusetts



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CONTENTS

<i>Academic Calendar, 1970-1971</i>	6
The Bridgewater Purpose	8
History of the College	9
Admissions	12
Financial Information: Expenses	15
Federal Assistance Programs	17
 Academic Policies	 18
<i>Graduation Requirements</i>	18
<i>Degree Applications</i>	18
<i>Grading System</i>	18
<i>Plagiarism</i>	19
<i>Withdrawal from Courses</i>	19
<i>Student Loads</i>	20
<i>Special Students</i>	20
<i>Transfer Credits</i>	20
<i>Warning, Probation, Dismissal</i>	20
<i>Withdrawal and Re-admission</i>	20
<i>Honors Program</i>	21
<i>Dean's List</i>	21
<i>Graduation Honors</i>	21
 Degree Programs	 22
Bachelor of Arts	23
B.S. in Elementary Education	25
B.S. in Health and Physical Education for Women	26
 Departmental Course Offerings	 28
<i>Anthropology</i>	28
<i>Art</i>	32

4	<i>Biological Sciences</i>	34
	<i>Chemistry</i>	38
	<i>Earth Sciences and Geography</i>	41
	<i>Economics</i>	46
	<i>Educational Services</i>	46
	<i>Elementary Education</i>	48
	<i>English</i>	50
	<i>Health and Physical Education for Men</i>	55
	<i>Health and Physical Education for Women</i>	57
	<i>History</i>	62
	<i>Instructional Media</i>	66
	<i>Library Science</i>	67
	<i>Mathematics</i>	68
	<i>Modern Foreign Languages</i>	72
	<i>Music</i>	79
	<i>Philosophy</i>	82
	<i>Physics</i>	83
	<i>Political Science</i>	86
	<i>Psychology</i>	86
	<i>Secondary Education</i>	89
	<i>Sociology</i>	90
	<i>Speech and Theatre</i>	93
	<i>Interdepartmental Programs in Natural Sciences</i>	96
	<i>Chemistry-Geology</i>	96
	<i>Pre-Medical and Pre-Dental Programs</i>	97
	<i>Oceanography</i>	97
	General Regulations	99
	<i>Absences from Class</i>	99
	<i>Make-up Tests and Examinations</i>	99
	<i>Absences in Student Teaching</i>	99
	<i>Student Responsibilities</i>	100
	<i>Alcoholic Beverages and Illegal Drugs</i>	100
	<i>Disciplinary Suspension Procedures</i>	100
	<i>Car Use and Car Parking</i>	101

Student Services	102
<i>Orientation</i>	102
<i>General Counseling</i>	103
<i>Academic Counseling</i>	103
<i>Cultural and Social Events</i>	104
<i>Physical Education and Recreation</i>	104
<i>Athletics</i>	105
<i>Health Services</i>	105
<i>Vocational Placement Service</i>	105
<i>Student Employment</i>	105
<i>Student Bookstore</i>	105
 Clement C. Maxwell Library	 106
 The Campus	 108
 Officers of Administration	 112
 Faculty	 114
 Board of Trustees	 129

ACADEMIC CALENDAR 1970-1971

First Semester

- | | |
|------------------------------------|--|
| September 9, 1970 | Administrative Faculty Meeting
General Faculty Meeting
Department Meetings
Registration—Seniors and Juniors |
| September 10, 1970 | Registration—Sophomores and Freshmen |
| September 11, 1970 | Registration—Specials and Transfers |
| September 14, 1970 | Opening of Academic Year—Classes Begin |
| September 22, 1970 | Convocation (Third Hour) |
| October 12, 1970 | Columbus Day—No Classes |
| November 6, 1970 | End of First Quarter |
| November 11, 1970 | Veterans' Day—No Classes |
| November 25, 1970 | Thanksgiving Recess—Classes Suspend at Noon |
| November 30, 1970 | Classes Resume at 8:00 a.m. |
| December 18, 1970 | Christmas Recess—Classes Suspend at 5:00 p.m. |
| January 4, 1971 | Classes Resume at 8:00 a.m. |
| January 8, 1971 | Classes Suspend at 5:00 p.m. |
| January 11, 1971 | Reading Day—No Classes |
| January 12, 1971 | First Semester Examinations Begin at 8:30 a.m. |
| January 21, 1971 | First Semester Examinations End at 5:00 p.m. |
| January 22, 25, 26, 1971 | Intersemester Holiday |



Second Semester

January 27, 1971	Registration—Seniors and Juniors
January 28, 1971	Registration—Sophomores and Freshmen
January 29, 1971	Registration—Specials and Transfers
February 1, 1971	Second Semester—Classes Resume at 8:00 a.m.
February 15, 1971	Washington's Birthday—No classes
March 26, 1971	End of Third Quarter
April 2, 1971	Spring Recess—Classes Suspend at 5:00 p.m.
April 12, 1971	Classes Resume at 8:00 a.m.
April 19, 1971	Patriot's Day—No Classes
May 11, 1971	Honors Convocation (Fourth Hour)
May 21, 1971	Classes Suspend at 5:00 p.m.
May 24, 1971	Reading Day—No Classes
May 25, 1971	Second Semester Examinations Begin at 8:30 a.m.
May 31, 1971	Memorial Day—No Examinations
June 4, 1971	Second Semester Examinations End at 5:00 p.m.—Close of Academic Year
June 6, 1971	Commencement Day



THE BRIDGEWATER PURPOSE

Bridgewater State College shares the national tradition of providing high quality education supported in large part by the State. Serving qualified students throughout the Commonwealth and particularly those living in the southeastern area, this College is committed to encouraging the broad educational preparation which is equally essential for making a maximum contribution to profession, community, and nation, and for developing a sound personal life. While maintaining its historical concern for preparing teachers, Bridgewater also dedicates itself to the education of students who may be interested in other vocations and professions.

Bridgewater strives to provide an atmosphere of integrity, justice, and social concern, and to develop within the student a self-discipline which will be evident beyond the classroom. In addition to stimulating his intellectual curiosity, Bridgewater State College also provides the student with the opportunity to understand and appreciate the major contributions to man's knowledge of himself and of the physical and social world in which he lives.

The second quarter of the nineteenth century was a period of tremendous political and intellectual growth in the United States. The movements toward more popular government, the extension of the franchise, and the "rise of the common man" were reflected in the need for better public schools and better trained teachers.

In Massachusetts, men like James G. Carter of Lancaster, who wrote extensively of the need for reform in public education, the Reverend Charles Brooks of Hingham, who had studied Prussian teacher-training institutions and who hoped to establish similar schools here, and the Honorable Edward Dwight of Boston, who offered to give \$10,000 for preparing qualified teachers for our common schools on condition that the General Court should match this gift, were leaders in the educational activities in the 1830's. With their encouragement, Horace Mann, a brilliant Boston Lawyer who had sacrificed his extensive practice to accept the position of Secretary of the Massachusetts Board of Education in 1837 and who was a firm believer in the need for "trained teachers for every child," persuaded the General Court to establish three normal schools for the training of teachers on a three-year trial basis. The first of these schools opened in Lexington on July 3, 1839, was later moved to West Newton, and finally to Framingham. The second, which opened on September 4, 1839 at Barre, was later moved to Westfield.

Bridgewater began its career on September 9, 1840 in the old Town Hall under the distinguished sponsorship of such citizens of Plymouth County as ex-President John Quincy Adams, Senator Daniel Webster, and the Honorable Artemus Hale. Mr. Nicholas Tillinghast, a graduate and former instructor at West Point Military Academy, was principal. Twenty-eight students, seven men and twenty-one women, were admitted to the first class. Six years later the first building to be erected specifically for normal school work in America was built at Bridgewater. "Coiled up in this institution as in a spring," said Horace Mann at the dedication of this building, "there is a vigor whose uncoiling may wheel the spheres."

Under incredible odds, Mr. Tillinghast labored for thirteen years. When he retired, the school was no longer an experiment, but a well-established part of the state's educational system. A number of Mr. Tillinghast's students took the lead in establishing normal schools in other states from Rhode Island to Illinois and Missouri.

Marshall Conant, the second principal (1853-1860), brought to the normal school the fruit of years of teaching in academies in Vermont, New Hampshire, Illinois, and Massachusetts. Under his leadership changes were made in the curriculum, especially in the enrichment of offerings in history and the sciences.



Albert Gardner Boyden, the third principal (1860–1906) who had been a student of Tillinghast and a teacher under Tillinghast and Conant, brought to Bridgewater the new psychological influence in education and instituted a period of growth and development that was continued by his son and successor, Arthur Clark Boyden (1906–1933). Bridgewater and Boyden were almost synonymous for three-quarters of a century. Under the Boydens, Bridgewater drew students from all over the United States, Europe, Latin America, Japan, and Burma. Teacher-training institutions in Armenia and Japan in particular owe their establishment and development to Bridgewater graduates of this period.

In 1921 a legislative act empowered the normal schools to award the Bachelor of Science in Education Degree to any person completing a four-year course in a normal school, and Bridgewater was one of the five state normal schools which granted the degree. In 1932, by act of the General Court, Bridgewater, together with other state normal schools, became a state teachers college and in 1960 by another legislative act the Massachusetts teachers colleges became state colleges. These changes which brought the teacher training institutions of Massachusetts into line with other similar institutions gave them added prestige and has enabled them to expand the curriculum offerings to make possible the granting of the B.A. degree as well as the degree of B.S. in Education.

The fall of 1937 saw the opening of the Graduate School. At the present time the Graduate School offers programs leading to the Master of Arts in Biology and in History, and the Master of Education in Elementary Education, Elementary School Mathematics, Guidance, Instructional Media, Health Education, Reading, School Administration, School Librarianship, Special Education, and Secondary Education with twelve areas of concentration.

The Division of Continuing Studies offers courses during the afternoon and evening for teachers in service, and for any interested adults desiring to continue their education. Most graduate students take their courses in this Division. An organized program of studies is offered by this Division during the summer both at Bridgewater and at Hyannis.

A disastrous fire completely destroyed three of the main buildings on the Bridgewater campus, the main classroom building, Tillinghast Dormitory, and the old Woodward Dormitory on December 10, 1924. The only buildings saved were Normal Hall, now Tillinghast Hall, Woodward Hall, and the boiler plant. The efforts of a dedicated core of faculty members enabled the school to continue in temporary quarters, and new buildings were dedicated on October 22, 1926.

Since World War II Bridgewater has undergone remarkable expansion in building, student enrollment, and size of faculty, and there are plans providing for the continuation of this growth through the next decade. The standards set by the early leaders have been maintained, and Bridgewater today retains the spirit exemplified by its motto "Not to be ministered unto but to minister."

The first administrative heads at Bridgewater were "heirs on the spot" of a well understood policy. This unbroken line of succession led to an unusual growth and expansion. Each of the succeeding presidents, Dr. Zenos Scott (1933-1937), Dr. John Kelly (1937-1951), Dr. Clement C. Maxwell (1952-1962), and Dr. Adrian Rondileau (1962-) has brought to Bridgewater the particular type of leadership that was needed during his administration, thus endowing the college with a marvelous continuity of development.

During the academic year 1965-1966 the college celebrated its 125th anniversary. No better tribute to Alma Mater's growth from an experimental teacher-training institution to a fully accredited, internationally recognized multipurpose institution can be found than the words of Albert Gardner Boyden who said years ago, "Thank God for the Bridgewater spirit of progress, of enlargement of culture, of devotion, of service, of inspiration which has quickened so many thousands of young lives. It has been the animus of the institution from its very beginning and is marching on to multiply its achievement."

ADMISSIONS

The selection of students who have the ability and preparation and who will most likely be successful in college studies is the basic aim of the admissions requirements.

Requirements

Each candidate is considered on the basis of the following requisites:

A. *Secondary school preparation.* Candidates for admission must have a high school diploma from an accredited secondary school or equivalent preparation. The high school record must certify completion of sixteen units (one unit representing the study of a subject four or five periods a week for a full school year) accepted by the high school in fulfillment of graduation requirements, or the candidate must present evidence of equivalent preparation.

The 16 high school units must include

English (Including Grade XII)	4 units
American History and Government	1 unit
College Preparatory Mathematics	2 units
Biology, Physics, or Chemistry	1 unit

Bachelor of Arts candidates must also have two units in a foreign language. Bachelor of Arts candidates desiring to major in Mathematics must present 3 units in College Preparatory Mathematics.

The distribution of the 16 high school units shall not exceed the following limits in any field.

English	4 units
Social Studies	4 units
Science	4 units
Foreign Languages	7 units*
Mathematics	4 units
Business	2 units
Fine Arts and Industrial Arts	2 units
Home Economics	2 units
Physical Education	1 unit**

B. *College Entrance Examination Board Tests.* Candidates for admission are required to take the College Entrance Examination Board Scholastic Aptitude Test and the Achievement Test in English. Two other achievement tests are required:

*8 for Language majors. No credit is accepted for less than 2 units in any one language.

**For Physical Education majors only.

Bachelor of Science Candidates:

Two tests of the candidate's choice.

Bachelor of Arts Candidates:

One test related to the intended major field of concentration. One test in a foreign language studied at the high school level and representing two units of study. (If English is the major field the third required achievement test may be one of the candidate's choice.)

C. *Personal Qualifications*

1. **Personal Recommendations.** Confidential data concerning the candidate, including the recommendation of the high school principal and comments by teachers, are given consideration in determining the fitness of the candidate for the proposed program of study.
2. **Health.** The candidate, if a teacher-training program is his intended area of study, must be in good physical and mental health, free from any disease, infirmity, or other defect, which would render him unfit for public school teaching. All candidates, regardless of the intended area of study, are required to have a health examination prior to entrance. Information concerning such examinations is forwarded to prospective students after notification of acceptance.

Procedures

A. An application form and other information may be obtained from the Office of Admissions, Bridgewater State College.

B. An official transcript of the candidate's secondary school academic record and personal rating record must be submitted by the high school principal. The academic record must include the grades of the first marking period or first quarter of the candidate's senior year.

Dates of Admission

Bridgewater State College is on a "rolling admissions" policy. There is no one date on which the College notifies all applicants simultaneously of their acceptance. Candidates are notified on a continuing basis over a period of several months, beginning about January 15.

If the number of qualified applicants exceeds the number that the facilities of the college will accommodate, a waiting list is established. The position of a candidate on the waiting list is determined by his total academic and personal evaluation.

Those candidates who have not met the requirements for admission by March 15 may jeopardize their chances of receiving consideration for acceptance since the College has the authority to close freshman admissions at this time.

Residence Hall Placement

Women. The requests for residence hall placement far exceed the actual openings available. Placement is based on the total evaluation of the candidate and the distance from her permanent place of residence. Women students under 21 are not allowed to live in private residences other than their own homes.

Men. Provisions are made for male students to reside within the area of the college in homes approved by the College if residence hall facilities are not available. These placements are assigned in the summer months prior to the opening of the academic year.

Transfer Admission

To be eligible for admission, a candidate who has attended another college or colleges must have an over-all "C" average from all the institutions attended and must be in good standing. The transfer candidate must comply with all the requirements for admission and he must present a transcript of credit, a statement of honorable dismissal, and a current catalog from the last college attended.

Fulfillment of these requirements for admission does not imply acceptance. Since the number of transfer applicants is much greater than the number of openings available, those candidates who offer the best evidence of scholastic achievement are chosen.

All applications should be filed by March 1.

Massachusetts State Colleges Policy on Non-Discrimination

It is the stated policy of the Board of Trustees of the Massachusetts State Colleges that in matters of college admissions, the employment of professional and non-professional personnel, and all other personnel matters in the State Colleges, individuals will be evaluated on their merits without respect to their race, color, creed, natural origin, age, or sex, as prescribed in applicable federal and state law.

The following summary indicates as nearly as possible the regular expenses for which each student must plan in an annual budget:

Tuition Fees for Residents of Massachusetts

1. \$200.00 a year payable in two installments at the beginning of each semester.
2. \$7.00 a semester hour—Courses for part-time day students.
3. \$18.00 a semester hour—Program of Continuing Studies.
4. \$11.00 a semester hour—Auditor in Program of Continuing Studies.

Tuition Fees for Non-Residents of Massachusetts

1. \$600.00 a year payable in two installments at the beginning of each semester.
2. \$21.00 a semester hour—Courses for part-time day students.
3. \$25.00 a semester hour—Program of Continuing Studies.
4. \$11.00 a semester hour—Auditor in Program of Continuing Studies.

Initial Admission Registration Fee

Each applicant for admission to Bridgewater State College must pay a registration fee of \$20.00 following notification of acceptance of admission. This fee will be deducted from the tuition of students who attend and will be forfeited by those who do not attend. Refunds for students leaving the college are made until six weeks after the beginning of the semester. After six weeks, no tuition refunds are made.

Textbooks and Supplies

Students are expected to purchase all necessary textbooks and supplies at an approximate expense of \$150.00 a year.

Board and Room

Each applicant for a residence hall reservation must pay a deposit of \$25.00 following notification of admission. This deposit will be deducted from the total residence hall fee of students who attend. It will be forfeited by those who do not enroll. Students who enroll for residence and then decide to commute will also forfeit their deposit.

Rates for residence hall accommodations range from \$250.00 to \$460.00 per year depending on the facility occupied by the student. The dining hall charge for the year is \$370.00. Payments are required in two installments

16 payable at the beginning of each semester. These are subject to change at any time by the Board of Trustees.

Students who are assigned to any residences, whether built by the State or the State College Building Authority, will not be entitled to any refund of the semester's rent in the event they leave or withdraw from either the residence or the college.

Students who are assigned to residences will be required to pay a \$25.00 "Dormitory Damage Security Deposit." Damages specifically performed by an individual student or an identifiable group of students will be billed at the time of the assessment of damages. General and assessable damages will be prorated and will reduce the amount of the students' security deposit. Restoration of deposits will be made if determined necessary. Unused deposits shall be refunded to the students.

Other Expenses

A library fee of \$5.00 per semester is required of all students.

A laboratory fee is charged in all laboratory science courses and in a number of studio and practicum courses in which consumables are used and/or breakage is incurred. This fee is non-refundable.

An annual Commencement Fee of \$2.50 is required of all full-time students. Upperclassmen transferring to Bridgewater State College must make up the annual payments they have missed so that by graduation all students will have paid the sum of \$10.00 which is used to defray Commencement Day expenses.

Certain student enterprises which are supported by all the students are financed by means of the Student Activities Fee, which is payable at the beginning of each college year. This fee, presently \$25.00, is mandatory.

A physical education fee of \$12.00 is required by all freshmen and all transfer students who have not fulfilled the physical education requirement. This fee covers towels, bathing suits (women only), locker and service privileges at the gymnasium.

The required gymnasium outfit for women in the regular curriculum, consisting of special uniform and shower equipment, costs approximately \$50.00. Full description with blanks for ordering will be sent out with notification of admission.

The required physical education outfit for men includes a jersey, gym shorts, sweat pants, sweat shorts, athletic supporter, gym socks, shower clogs and towels, the approximate cost of which is \$15.00. All men entering as freshmen or as transfer students will be informed of the procedure for providing information on sizes to the dealer furnishing the uniforms.

An annual athletic fee (\$20.00 in 1969–1970) is required of all full-time students. The fee is used to underwrite the cost of the intercollegiate and intramural sports programs for both men and women.

A \$5.00 placement service fee is required of all seniors.

A late registration fee of \$5.00 shall be assessed on students who register after the official college registration period.

A required annual Student Union fee is anticipated (\$25.00 in 1969–1970).

Federal Assistance Programs

Bridgewater State College participates in three federally sponsored programs of financial aid. For students accepted for admission who show a proven financial need, funds are available in the *National Defense Student Loan Program* (N.D.S.L.) which allows the student to borrow money as an undergraduate or a graduate student. Repayment of the loan at 3% interest begins 9 months after graduation and is extended over a 10-year period. Special cancellation is allowed at 10% or 15% per year for students who go into the teaching profession.

For students who show an exceptional financial need, the *Education Opportunity Grants* (E.O.G.) program is available. Up to one-half of the total financial need may be awarded in a grant to the exceptionally needy student. These grants are renewable providing the student makes application each year and continues to show the same proven need.

A third program for the needy student is the *College-Work Study Program* (E.O.P.). Students are assigned to various departments or agencies on and off campus and are paid an hourly rate ranging from \$1.40 per hour to \$2.00 per hour.

Since Bridgewater State College is a participating member of the College Scholarship Service of the College Entrance Examination Board, all loans, grants, and work-study awards are made on the basis of demonstrated financial need as determined by the need analysis system derived from information supplied in the Parent's Confidential Statement. All applicants may obtain the Parent's Confidential Statement through their high school guidance counselors, or the college of their choice. Parent's Confidential Statements should be mailed to College Scholarship Service, Box 176, Princeton, New Jersey, 08540 no later than March 15 preceding the academic year for which they have been accepted. Supplementary applications for financial aid should be requested by writing directly to the Financial Aid Officer, Bridgewater State College, Bridgewater, Mass. 02324.

Loans

Alumni and friends of the college have at various times made contributions to the Students' Loan Fund at Bridgewater established for the purpose of extending aid to needy members of the Junior and Senior Classes. This fund is administered by a faculty committee, appointed by the president.

Students in the Sophomore, Junior and Senior Classes may apply for loans to aid them in the payment of their college expenses at the office of the Massachusetts Higher Education Assistance Corporation, 511 Statler Building, Boston, Mass. 02116.

ACADEMIC POLICIES

The regular academic year consists of two semesters of sixteen weeks each. Curricula leading to baccalaureate degrees are so planned that a student pursuing a normal program will ordinarily be able to complete the requirements for graduation in four years or eight semesters.

Graduation Requirements

Degrees will be awarded to candidates who have fulfilled the following minimum requirements.

- 1) 120 semester hours of credit, distributed according to requirements of either the Bachelor of Arts or the Bachelor of Science curriculum;
- 2) completion of two years residence;
- 3) a cumulative average of 2.0;
- 4) clearance of all financial debts to the college.

Degree Applications

All students who expect to receive their degree from Bridgewater State College are required to complete a formal degree application. These applications are available in the Registrar's Office.

Students should obtain the application during the second quarter of their senior year, and with their Department Chairman's assistance, complete and return the application to the Registrar's Office no later than December 1 of that year.

Grading System

The college uses the traditional letter-grade system of marking to indicate the student's relative performance; Superior—A; Good—B; Satisfactory—C; Poor—D; Failure—E; WP—Withdrawn Passing; WF—Withdrawn Failing. In computing averages, grades are assigned the following numerical

values: A—4; B—3; C—2; D—1; E—0. Promotional averages are annually cumulative: for freshmen to advance to sophomore status, an average of 1.5 is required; to advance to junior status, an average of 1.75; to advance to senior status and to be eligible for graduation, a cumulative average of 2.0 is required.

An incomplete shall be given only when a student has missed the examination for good reason or has not completed a major assignment which can be finished within a short time. Incompletes must be made up no later than the fourth week of the regular academic semester following that in which the Incomplete was recorded. A grade of "E" will automatically be entered on the transcript of any student who fails to meet this requirement.

All courses failed at Bridgewater and subsequently passed either in the day or evening sessions at Bridgewater shall be utilized in quality point ratios. Semester hours for a course failed and later passed at Bridgewater shall be used only once in computing the Q.P.R., and an average of the grades achieved in both courses (failed and made-up) shall be used in determining the total number of quality points for the course. This is to be applied beginning with the class entering in 1969–1970.

Plagiarism

Academic honesty is expected of all students. Plagiarism and cheating are not condoned and are subject to an academic penalty, which may be failure for the course in which the violation took place. A record of the violation is kept and repeated offenses may result in suspension or dismissal from the College.

Withdrawal from Courses

If a student receives permission from the Dean of Undergraduate Studies to drop a course before the completion of the first four weeks, the instructor will be so advised and no grade of any kind will be submitted. After the first four weeks some form of grade is required for all students enrolled in a course. If a student for some serious reason desires to drop a course after this four week period, he must secure permission in writing (on three forms provided by the Office of the Registrar) from the Dean of Undergraduate Studies. Only if such a form is filed in the Registrar's Office and the second copy returned to the head of the department in which the student is majoring may the grade of WP or WF be recorded. In all other instances a grade of "E" shall be given.

Student Loads

A full-time student shall carry a class load of 12 to 18 semester hours, including evening courses as well as day courses. Students on probation are limited to a maximum of 15 semester hours.

Special Students

The term special student refers to non-matriculated students or to students who have been given special permission to take a part-time load.

Transfer of Credit After Admission

Approval for Bridgewater summer school and continuing studies courses, and any courses to be taken at another institution, must be obtained in advance from the appropriate department chairman and the Dean of Undergraduate Studies. Application forms are available in the Office of the Registrar. Applications for approval of a course from another institution should be accompanied by the appropriate catalogue from that institution. Transcripts for summer courses or continuing studies courses must be submitted to the Registrar's Office within 6 weeks after completion of the course. This transfer of grades is not done automatically. It is the student's responsibility to have continuing studies grades sent to the Registrar's Office.

Warning, Probation, Dismissal

Warning notices are given at mid-semester to all freshmen and sophomore students who fail to maintain a "C" average in any course.

At the end of each semester, all students whose averages fall below the required minimum standard are subject to dismissal. Those students with a reasonable chance of raising their total average to the acceptable level within one semester may be placed on probation, on the recommendation of the Faculty Committee on Academic Standing and by approval of the Academic Dean.

Withdrawal from the College and Re-admission

Any student who must prematurely end his education should withdraw officially to insure honorable dismissal. Official withdrawal forms may be obtained from the Office of the Registrar and must be signed by the Academic Dean. Should the student leave the college without giving official notification, failing grades will be recorded for all courses.

Students who have officially withdrawn in good standing may apply for re-admission to the college through the Office of the Director of Admissions. Application should be made as early as possible prior to the beginning of

the semester, in order to secure a place on the roster before the enrollment quota is reached. Re-admission may be granted only after one full academic semester has elapsed since withdrawal.

Students who have been separated from the college for academic reasons may re-apply for admission through the Office of the Director of Admissions. A letter to the Director of Admissions must be written asking for consideration. An interview will then be arranged by the Director with the Undergraduate Committee on Admissions. Following this interview the applicant will be duly notified within one week.

It is recommended that such an applicant give evidence of at least one year of academic work at some other institution of higher learning. Men who enter military service may apply for re-admission when duly separated from active duty. All course work taken elsewhere will not necessarily be accepted as transfer credit.

Honors Program

The general aim of the Honors Program is to encourage students to do more intensive, independent, and creative work. More specifically, its aims are: to encourage superior and interested students to achieve their fullest intellectual potential through critical thinking, scholarship, and research; to help these students improve their skills in oral and written expression; to present an opportunity for frequent and close association of able students for intellectual exchange among themselves and with faculty members and other scholars; and to create an atmosphere which fosters intellectual, artistic, and academic achievement.

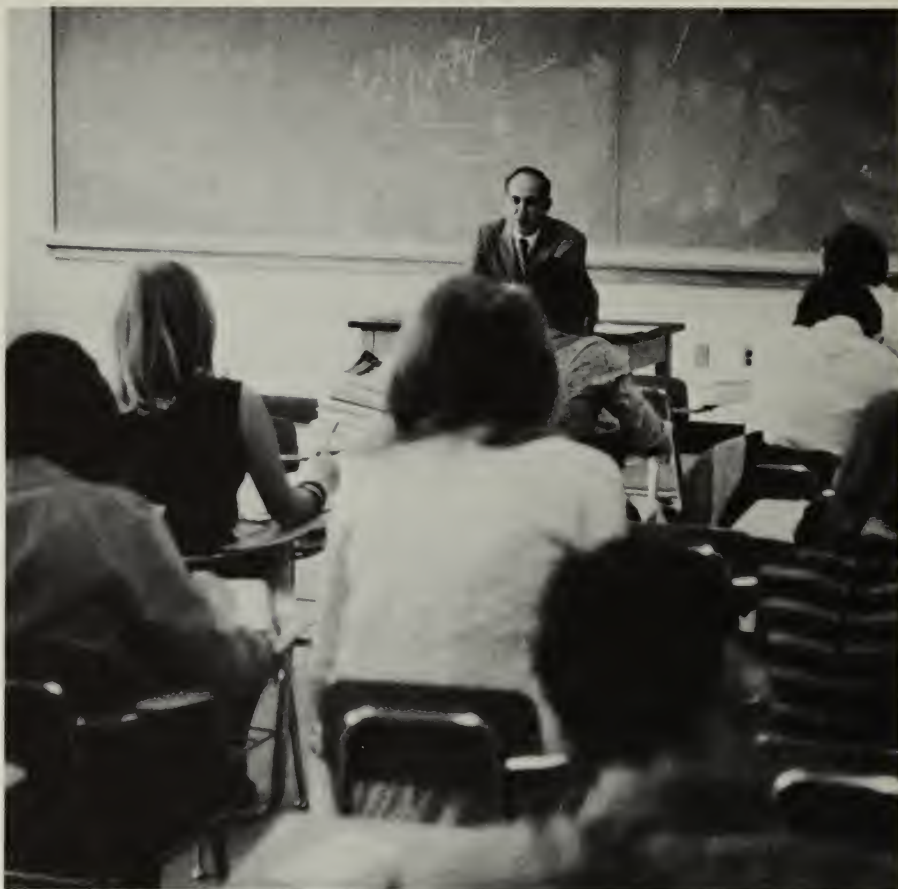
Dean's List

The Dean's List is published at the termination of each academic year to honor academic achievement. A 3.3 average is required.

Graduation Honors

Academic excellence for the baccalaureate program is recognized by awarding degrees summa cum laude (cumulative average of 3.8), magna cum laude (3.6), and cum laude (3.3).

Graduation with Departmental Honors is recognized by inscribing on the diploma the phrase "With Honors in (the appropriate field)."



DEGREE PROGRAMS

Bridgewater State College is authorized to grant the degrees of Bachelor of Arts and Bachelor of Science in Education. The Bachelor of Science in Education degree prepares students for teaching in the elementary schools and prepares women students for teaching physical education and health education at all levels. The Bachelor of Arts degree allows the student to select from fourteen different areas of concentration, and provides preparation for secondary school teaching (if education is elected as a minor), graduate school, and fields of endeavor related to the major area of study. The areas of concentration are Anthropology, Biology, Chemistry, Chemistry-Geology, Earth Science, English, French, Geography, History, Mathematics, Physics, Psychology, Sociology, and Speech and Theatre.

GENERAL EDUCATION REQUIREMENTS

All students must take the following sequence of courses:

- | | |
|--|------------|
| I. Humanities | |
| A. English Composition | 6 crs. |
| B. Literature | 3 crs. |
| C. Introduction to Philosophy | 3 crs. |
| D. Humanities Elective from Art or Music | 3 crs. |
| E. Humanities Elective from
Art, Music, Literature, Speech and Theatre | 3 crs. |
| F. Total Humanities Requirements | 18 crs. |
| II. Foreign Language | |
| (One half or all of these credits can be waived by
placement examination) | 12 crs. |
| III. Social Sciences | |
| A. History | 6 crs. |
| B. Social Science Electives—Block 1 (select 2 courses)
General Psychology, Introduction to Sociology,
Anthropology, World Regional Geography I or II | 6 crs. |
| C. Social Science Electives—Block 2 (select 2 courses)
Government, Political Science,
American History, Economics | 6 crs. |
| D. Massachusetts and United States Constitution* | 1 cr. |
| E. Total Social Science Requirements | 18–19 crs. |
| IV. Mathematics and Natural Sciences | |
| A. Laboratory Sciences (a one-year sequence) | 6 crs. |
| B. Mathematics | 3 crs. |
| C. Mathematics and/or Natural Sciences Electives | 6 crs. |
| D. Total Mathematics and Natural Sciences
Requirements | 15 crs. |
| V. Health and Physical Education | |
| A. Activities—to be taken for 3 semesters | 0 cr. |
| B. Health—to be taken for 1 semester | 2 crs. |
| C. Total Health and Physical Education Requirements | 2 crs. |

*Massachusetts state law requires all students to take a course in the federal and state constitutions. Students may fulfill his requirement by electing HI 221 (U.S. History to 1865). Those who do not elect HI 221 must take HI 273 (United States and Massachusetts Constitutions).

MAJOR REQUIREMENTS

Each student must complete not less than 24 and not more than 36 credits in one of the major fields of concentration. The 24 and 36 credits reflect all courses taken in the major department, including those which are listed under the distribution of General Education Requirements. The student must select his major field by the end of the sophomore year.

MINOR FIELDS OF CONCENTRATION

Education Minor. Students may elect an education minor (see Education under "Courses of Instruction") by taking a minimum of 18 credits in the sequence recommended by the Department of Education, six of which will be in student teaching.

Other Minors. In general, students may pursue a sequence of courses in cognate areas where such a sequence is possible. See "Courses of Instruction" for individual department programs.

LIBRARY INTRODUCTION

Freshmen are exposed to the Library during one quarter of the academic year. One period a week is devoted to developing basic library skills. Required of all freshmen; 1 one-hour period during one quarter; no credit.



Bachelor of Science in Elementary Education

25

General Education Requirements—68 credits

Humanities and Creative Arts—24 credits

English: 12	EN 101 and 102	6	<i>English Composition</i>
	EN 211 and 212	6	<i>World Literature</i>
	or EN 221 and 222		<i>English Literature</i>
	or EN 231 and 232		<i>American Literature</i>
Speech & Theatre: 3	ST 200	3	<i>Oral Communication</i>
Art: 3	AR 110	3	<i>Introduction to Art</i>
Music: 3	MU 110	3	<i>Introduction to Music</i>
Philosophy: 3	PL 380	3	<i>General Philosophy</i>

Social Sciences and Behavioral Sciences—21 credits

History: 9	HI 111 and 112	6	<i>History of Western Civilization</i>
	HI 221	3	<i>U.S. History to 1865</i>
Psychology: 6	PY 200	3	<i>General Psychology</i>
	PY 224	3	<i>Child Growth and Development</i>

Elective—6 credits

History: 3	HI 222		<i>U.S. History since 1865</i>
Sociology: 3	SO 202		<i>Introduction to Sociology</i>
Economics: 3	EC 400		<i>Economic Principles and Problems</i>
Anthropology: 3	AN 201		<i>General Anthropology</i>

Natural Science and Mathematics—21 credits

Mathematics: 6	MA 107 and 108	6	<i>College Mathematics for Elementary Majors I-II</i>
Biology: 6	BI 101 and 102	6	<i>Introduction to the Biological Sciences</i>
Chemistry: 3	CH 200	3	<i>Survey of Chemistry</i>
Physics: 3	PH 200	3	<i>Survey of Physics</i>
Earth Science: 3	ES 200	3	<i>Fundamentals of Geography</i>

Health & Physical Education—2 credits

HE 110	2	<i>Personal Health</i>
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Physical Education Activities—3 semesters without credit

Professional Education

Professional Education Courses are outlined under “Courses of Instruction,” Department of Elementary Education.



Bachelor of Science in Health and Physical Education for Women

FRESHMAN YEAR *First Semester*

EN 101 <i>Composition</i>	3
BI 102 <i>Introduction to the Biological Sciences II</i>	3
AR 120 <i>The Visual Arts</i>	2
HE 151 <i>Personal and Community Health</i>	3
PE 161 <i>Introduction to Physical Education</i>	2
HE 171 <i>Anatomy I</i>	2
PE 133 <i>Field Hockey I</i>	.5
PE 125 <i>Swimming</i>	.5
PE 127 <i>Track and Field</i>	.5
PE 131 <i>Basketball I</i>	.5
PE 141 <i>Creative Rhythms</i>	.5
PE 149 <i>Square Dance I</i>	.5

Second Semester

EN 102 <i>Composition</i>	3
MA 110 <i>Elementary Statistics</i>	3
BI 101 <i>Introduction to the Biological Sciences I</i>	3
MU 120 <i>Music</i>	2
HE 172 <i>Anatomy II</i>	2
PE 142 <i>Folk Dance I</i>	.5
PE 106 <i>Gymnastics I</i>	.5
PE 144 <i>Modern Dance I</i>	.5
PE 126 <i>Badminton I</i>	.5
PE 148 <i>Lacrosse I</i>	.5
PE 138 <i>Soccer</i>	.5

 16.0

 18.0

SOPHOMORE YEAR *First Semester*

PY 200 <i>General Psychology</i>	3
HI 221 <i>U.S. History to 1865</i>	3
PH 200 <i>Survey of Physics</i>	3
PE 261 <i>Officiating</i>	3
PE 265 <i>Elementary Physical Education</i>	3
PE 202 <i>Gymnastics II</i>	.5
PE 211 <i>Games</i>	.5
PE 241 <i>Folk Dance II</i>	.5
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	16.5

JUNIOR YEAR

ED 392 <i>Supervised Practice Teaching</i>	3
SO 202 <i>Introduction to Sociology</i>	3
PE 367 <i>Evaluation in Physical Education</i>	3
PE 363 <i>Secondary Physical Education</i>	3
PE 333 <i>Field Hockey II</i>	.5
PE 323 <i>Swimming II</i>	.5
PE 321 <i>Golf I</i>	.5
PE 347 <i>Square Dance II</i>	.5
Elective	3
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	14.0 or 17.0

SENIOR YEAR *First Semester*

ED 480 <i>Philosophy of Education</i>	3
HE 451 <i>School Health Administration and Safety</i>	3
PE 467 <i>Problems in Health and Physical Education</i>	3
PE 471 <i>Physiology of Exercise</i>	3
EN 211 <i>Literature—Western Civilization</i>	3
PE 444 <i>Bowling</i>	.5
PE 425 <i>Archery</i>	.5
PE 439 <i>Volleyball</i>	.5
PE 405 <i>Gymnastics IV</i>	.5
PE 446-449 <i>Elective</i>	1
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	18.0

Second Semester

PY 226 <i>Adolescent Psychology</i>	3
HI 222 <i>U.S. History since 1865</i>	3
CH 200 <i>Survey of Chemistry</i>	3
HE 254 <i>Methods in Health and First Aid</i>	3
ST 200 <i>Oral Communication I</i>	3
PE 226 <i>Badminton II</i>	.5
PE 246 <i>Lacrosse II</i>	.5
PE 244 <i>Modern Dance II</i>	.5
PE 238 <i>Softball</i>	.5
PE 228 <i>Tennis I</i>	.5
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	17.5

Second Semester

ED 392 <i>Supervised Practice Teaching</i>	3
PL 380 <i>Introduction to General Philosophy</i>	3
BI 385 <i>Mammalian Physiology</i>	3
PE 352 <i>Adapted Physical Education</i>	3
HE 372 <i>Applied Anatomy and Kinesiology</i>	3
PE 332 <i>Basketball II</i>	.5
PE 328 <i>Tennis II</i>	.5
PE 308 <i>Gymnastics III</i>	.5
PE 348 <i>Elective</i>	.5
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	14.0 or 17.0

Second Semester

ED 471 <i>Supervised Practice Teaching</i>	6
ST 400 <i>Creative Techniques for Teaching</i>	3
PE 465 <i>Supervision and Administration Physical Education</i>	3
PE 422 <i>Golf II</i>	.5
PE 446-449 <i>Elective</i>	.5
	<hr/>
	13.0

DEPARTMENTAL COURSE OFFERINGS

The following section contains the courses offered by the Academic Departments of Bridgewater State College.

Course Numbering System

- 100–199 Introductory courses or courses normally taken in the freshman year
- 200–299 Courses normally taken in the sophomore year
- 300–399 Courses normally taken in the junior or senior years
- 400–499 Courses normally taken only by seniors

Usually courses offered in the fall semester are odd-numbered; those offered in the Spring semester are even-numbered. Courses offered both semesters usually end in zero.

Prerequisites

Students should make certain that they have the necessary prerequisites for each course. Failure to do so may result in being inadequately prepared to take the course, and may result in the loss of any credit earned in the course. Prerequisites are given after the abbreviation Prq.

Unless specified otherwise, courses meet for three 50-minute periods or two 75-minute periods per week for one semester, and count for three credits. Departures from this rule, such as laboratory and studio periods and quarter courses, are indicated in the course descriptions.

When an instructor's name is specified, it indicates that he normally teaches the course. However, changes are sometimes necessary, and they will be specified in the class schedule issued at registration.

DEPARTMENT OF ANTHROPOLOGY

Professor Joseph Moore, *Chairman*

Assistant Professors: Abraham Thomas, Dorothy Wertz

Required for a Major in Anthropology: AN 201 and AN 205, plus six to eight other courses in Anthropology.

Required courses in other fields will be determined by the area of specialization in Anthropology. Students preparing for graduate work in Physical Anthropology will major in Biology and minor in Anthropology. Students preparing for graduate work in Archaeology will major in Geology and minor in Anthropology. Those preparing for graduate study in General Anthropology will have concentrations in Biology, Chemistry, Geology, or Physics.

Students preparing for graduate work in Cultural Anthropology will have concentrations in other Behavioral Sciences, or English, Geography, History, Language, Art, Music, or Speech. Students preparing for graduate study in Personality and Culture will have concentrations in Psychology and Zoology.

MA 110 is required of all majors. A minor in Anthropology requires AN 201 and AN 205 and 4 other courses in Anthropology, a total of 18 credits.

AN 201 General Anthropology 3 crs.

Origin of man. Physical evolution of man. Divisions of anthropology, cultural history, and development. Basic concepts and methods of analyzing cultures. *Professor Moore and Staff.*

AN 202 Cultural Anthropology 3 crs.

Science of human behavior in different cultural contexts. Man's biological and cultural variability; human societies of the present and recent past around the world; dynamics of cultural change. *Assistant Professor Wertz.*

AN 205 Culture in Process 3 crs.

Prq.: AN 201 or AN 202.

Use of the inductive approach to examine the effect of culture on individuals and groups. Discussion and study of applied anthropological techniques used in planned programs to assist in adopting social change. *Professor Moore and Staff.*

AN 207 Primitive Religion 3 crs.

The origins and development of religion in society; myth, ritual, magic, and religious specialists. Australian, African, American Indian, Near Eastern folk religion, and folk religion of the Negro in the new world. *Assistant Professor Wertz.*

AN 208 Religion in the Cultures of Asia 3 crs.

A survey of the beliefs and practices of Hinduism, Buddhism, and Islam, as related to their societal and cultural backgrounds. Attention will be given to aboriginal religions of the South Pacific and to the ancient religions of China and Japan, Taoism, Confucianism, and Shinto. The "great tradition" of philosophy will be compared to the "folk tradition" and actual practice of each religion in Asia today. *Assistant Professor Wertz.*

AN 210 Introduction to Folklore 3 crs.

The meaning and subdivisions of folklore: myth, folk tale, proverb, riddles. Analyses of story elements and major folklore areas. *Assistant Professor Wertz.*

AN 301 Introduction to Physical Anthropology 3 crs.

Prq.: AN 201 or 1 yr. of natural science.

An introduction to the principles of Physical Anthropology as it relates to human evolution. Examinations of present evidence, in an attempt to discover the origin of man. Such aspects of progress in homeostasis, primate radiation, body structure and posture, feeding ecology and behavior, evolution of the head, and reproduction. *Professor Moore.*

AN 302 Introduction to Archaeology 3 crs.

Prq.: AN 201 or 1 yr. of natural science.

Examination of field methods, systems of data recording, analytical methods, and their conceptual basis. Abstract theory closely integrated with specific case material. Laboratory exercises in application of artifact analysis. *Professor Moore.*

AN 304 Personality and Culture 3 crs.

Prq.: AN 201, AN 202 or major in Behavioral Sciences.

A study of the interrelationships between individual and society, focusing on 1) major theories about the formation of personality by the surrounding structures, including Freudian theory and the Marxist concept of alienation; 2) a cross-cultural study of childhood; 3) adolescence in changing America; 4) several conceptions about the contemporary American personality as compared with personality structures in traditional society. *Assistant Professor Wertz.*

AN 305 Peoples and Cultures in India 3 crs.

Prq.: AN 201, AN 202 or ES 452.

A survey of social structure in India, with emphasis on 1) the caste system; 2) the traditional Hindu and Islamic cultures; and 3) the effects of urbanization and modernization upon traditional structures. *Assistant Professor Wertz.*

AN 307 Seminar: Urban Cultural Dynamics 3 crs.

Prq.: AN 201, or ES 353, or SO 306.

A study of poverty, urban renewal, and the experience of the ghetto, crime, family disintegration, problems of housing and transportation, and proposed solutions to the crisis of the inner city. Wherever possible emphasis will be upon Boston. *Assistant Professor Wertz.*

AN 310 Peoples and Cultures of Africa South of the Sahara 3 crs.

Prq.: AN 201, AN 202, ES 261, SO 202.

A survey of present cultures of tropical and subtropical Africa, problems of colonialism, acculturation, new nationalism, and rapid social change. *Instructor to be announced.*

AN 320 West Indian Negro Cultures in the Caribbean. 3 crs.

Prq.: AN 201, or AN 202, or SO 203, or ES 261.

Survey of the West Indian Negro cultures in the West Indies including social organization, religion, political development, and adjustment to modern conditions. *Professor Moore.*

AN 322 Seminar: Afro-Asian Urban Cultures 3 crs.

Prq.: same as for AN 310.

Description and analysis of urban cultures in Africa and Asia with special attention to problems of rapid social change, acculturation, political and economic developments. *Professor Moore and Staff.*

AN 323 Theory of Culture 3 crs.

Prq.: AN 205.

A survey of early schools of cultural theory including Adolf Bastian, Lewis Morgan, Edward B. Tylor, the British Diffusionists, the German Historical-Diffusionist School, French Sociology, Functionalism, including Franz Boas and Malinowski. Current functional evolutionary theory. *Assistant Professor Wertz.*

AN 324 Human Evolution and Variation 3 crs.

Prq.: AN 301.

Application of the general evolutionary theory to man; primatology; human paleontology; race formation; cultural effects. For students with a concentration in Biology, Physics, Chemistry, or Earth Science. *Professor Moore.*

AN 325 Survey of West African Cultures 3 crs.

Prq.: same as for AN 310.

An introduction to contemporary diversity in relation to language grouping technologies, national problems, and opportunities. *Instructor to be announced.*

AN 326 Survey of East African Cultures 3 crs.

Prq.: same as for AN 310.

An introduction to the cultural diversities in relation to language grouping, technologies, national problems, and opportunities with emphasis on the present. *Instructor to be announced.*

AN 327 Seminar: Urban Centers in East and West Africa 3 crs.

Prq.: same as for AN 310.

Major African cities and the culture of their hinterland focusing on cities like Nairobi, Kanipala, Kairo, Kumase, and Moarovia, and the role these cities play in shaping the lives of people in the surrounding territories. *Instructor to be announced.*

AN 402 Seminar on Field Methods 3 crs.

Prq.: AN 201 or AN 202.

Methods of field work for cultural anthropologists working in ongoing societies; design of field studies; techniques for collection and analysis of empirical data; experimental field projects. *Professor Moore.*

AN 404 Seminar: Anthropology for Elementary Education 3 crs.

Prq.: AN 201, AN 202.

Theory and techniques of teaching Anthropology to elementary students: Grades 1 through 6. Special course material in physical and cultural anthropology and prehistory and archaeology. *Professor Moore.*

AN 406 Archaeological Field Excavation, Survey and Research in Prehistoric Village Sites in New England 3 crs.

Prq.: AN 302.

Intensive training in excavation techniques, recordation, analysis, and interpretation of archaeological materials. For students with a concentration in Earth Science. *Professor Moore and Staff.*

DEPARTMENT OF ART

Associate Professor Doris Tebbetts, *Chairman*

Assistant Professor William Kendall

Instructors: John Boyko, John Heller, Estela Keim

Eighteen credits are required for an Art minor, and fifteen credits for a concentration in Art; AR 110 and AR 280 may be included in either the minor or the concentration. A grade of C or above in AR 110 or AR 280 is required to continue in the Art minor program. Course sequences for a concentration or a minor in Art should be arranged with the department chairman.

AR 110 Introduction to Art 3 crs.

Emphasis on painting, sculpture, and architecture; analysis of media, technical processes, and esthetic principles; and discussion of style and its historical context. Assigned readings and museum visits. *Mrs. Keim and Staff.*

AR 120 The Visual Arts 2 crs.

Emphasis on architecture, sculpture, and painting. Analysis of historical styles, media, and specific examples of the major periods. Assigned readings and museum visits. *Associate Professor Tebbetts and Staff.*

AR 280 Understanding the Arts 3 crs.

Development of a framework for visual understanding and enjoyment. Analytical techniques applied to specific objects chosen for study. Attention focused on social, historical, and psychological factors. Assigned readings and museum visits. *Mrs. Keim and Staff.*

AR 370 Basic Design 3 crs.

Two and three dimensional surfaces and their structural possibilities. Elements of plastic expression related to increasingly complex concepts of space and form arrangement. Three two-hour periods weekly. *Mr. Heller and Staff.*

AR 372 Drawing I 3 crs.

Basic concepts: perspective, modeling in light and dark, contour drawing. Exploration of various media: pencil, pen and ink, charcoal, ink wash, etc. Three two-hour periods weekly. *Assistant Professor Kendall.*

AR 373 Drawing II 3 crs.

Prq.: AR 372 or consent of the instructor.

Advanced projects will be planned according to the individual's style development and media preference. Three two-hour periods weekly. *Assistant Professor Kendall.*

AR 374 Crafts for Special Education 3 crs.

Direct experience with a variety of materials and processes adapted to the needs of special education. Three two-hour periods weekly. *Mr. Boyko.*

AR 375 Crafts Design I 3 crs.

Direct, creative experience with materials including wood, paper, cloth, yarn, plastics, stone, and printing materials. Three two-hour periods weekly. *Mr. Boyko.*

AR 376 Crafts Design II 3 crs.

From a variety of possibilities, a single medium and its processes will be chosen by the individual for concentration. Three two-hour periods weekly. *Mr. Boyko.*

AR 377 Glassblowing I 3 crs.

Introduction to glass as a means of creative expression. Emphasis upon basic forming techniques and methods of design in glass. Three two-hour periods weekly. *Mr. Boyko.*

AR 378 Glassblowing II 3 crs.

Further exploration of glassblowing. Emphasis on studio equipment, design, color, and advanced techniques. Three two-hour periods weekly. *Mr. Boyko.*

AR 379 Sculpture 3 crs.

Design experimentation with traditional and new techniques. Media will include wood, metal, and resins. Three two-hour periods weekly. *Mr. Boyko.*

AR 381 Ceramic Design I 3 crs.

Basic wheel forming and construction. Techniques in clay. Glazing. AR 370 is recommended. Three two-hour periods weekly. *Mr. Heller.*

AR 382 Ceramic Design II 3 crs.

Prq.: AR 381.

Development of student's own design, ideas, and technical ability. Glaze and clay compounding. Three two-hour periods weekly. *Mr. Heller.*

AR 383 Metal Design I 3 crs.

Basic design, construction, and forming techniques. Jewelry, constructed forms, sculpture. AR 370 recommended. Three two-hour periods weekly. *Mr. Heller.*

AR 384 Metal Design II 3 crs.

Prq.: AR 383.

Advanced problems and techniques. Three two-hour periods weekly. *Mr. Heller.*

AR 387 Painting I 3 crs.

Basic skills, picture organization, and oil painting techniques. Students will find individual solutions to assigned problems. Field trips to museums and galleries. Three two-hour periods weekly. *Assistant Professor Kendall.*

AR 388 Painting II 3 crs.

Prq.: AR 387 or consent of the instructor.

Advanced projects will be planned according to the individual's style development. Three two-hour periods weekly. *Assistant Professor Kendall.*

AR 389 Independent Study I and II 3 crs.

Special problems in any studio art offered. Arrangements made by the department chairman. *Associate Professor Tebbetts and Staff.*

AR 390 Interior Design 3 crs.

Traditional and contemporary styles in furniture and interior design studied in illustrated lectures and field trips. Problems in selection and arrangement of home furnishings. *Associate Professor Tebbetts.*

AR 391 History of Art I 3 crs.

Prq.: AR 110, AR 280, or consent of the instructor.

Major developments in art from the Prehistoric through the late Gothic. Style is examined in relation to the historical process. Assigned readings and museum work. *Mrs. Keim and Staff.*

AR 392 History of Art II 3 crs.

Prq.: AR 391, or consent of the instructor.

A continuation of AR 391 beginning with the Renaissance through the Modern era. The historical approach supplemented with analysis of stylistic problems. Assigned readings and museum work. *Mrs. Keim and Staff.*

DEPARTMENT OF BIOLOGICAL SCIENCES

Professor Kenneth Howe, *Chairman*

Commonwealth Professor and Dean of the Graduate School Frank Hilferty

Professors: James Brennan, Elizabeth Cirino, Lawrence Mish, William Wall, Jr.

Associate Professor Walter Morin

Assistant Professor Walter Hewitson

Instructor Harold Schaefer

The Department offers a broad program for undergraduate majors leading to the degree of Bachelor of Arts in Biology and is designed to prepare students for teaching, research, graduate work, or a wide variety of applied fields. A minor program is provided for students with majors in fields related to biology, or for those interested in a better understanding of the life sciences. For those preparing for careers in medicine, dentistry, or oceanography, the Department participates in those Inter-departmental Programs (See catalog section: Inter-departmental Programs).

Students majoring in the biological sciences must satisfactorily complete the following courses: BI 101, 102, 281, 282, 283, 292, 381, 393, 395, 397, 401, 405, 411.

In addition to the General Education requirements, Biology majors must also satisfactorily complete the following courses: CH 131†, 132; MA 103†, 104; PH 181†, 182; LG 101, 102, 291, 292*; or LF 101, 102, 181, 182; and PY 200. The courses CH 131, 132; MA 103, 104 should be taken in the freshman year.

† Students with appropriate backgrounds and the concurrence of their Departmental adviser may enroll in more advanced courses in Chemistry, Physics, and Mathematics than those cited above.

* Students considering subsequent graduate work are strongly advised to select German for the language requirement.

The Biology minor consists of an integrated series of courses appropriate to each student's concentration and arranged individually with a faculty adviser from the Department of Biological Sciences.

Entering students who have unusually broad backgrounds in Biology will usually be permitted to enroll in courses beyond the 100 series if they meet the departmental requirements for advanced placement. Persons who feel they may be eligible for advanced placement should consult with the Chairman of the Department.

BI 101 Introduction to the Biological Sciences I 3 crs.

The botanical aspects of biology with emphasis on the structure and function of cells, tissues, organs, and the plant body, together with a general survey of the plant kingdom. Such topics as photosynthesis, water relations, respiration, growth, reproduction, heredity, disease, and evolution are included. BI 101, 102 constitute a coordinated course in general biology, and students are expected to complete both courses. Two lectures and one two-hour laboratory period weekly. *Professor Howe and Staff.*

BI 102 Introduction to the Biological Sciences II 3 crs.

The zoological aspects of biology with emphasis on such topics as: the nature of sciences and scientific thinking; the structure and physiology of cells, tissues, organs, and organ-systems; embryogeny; heredity; ecological and phylogenetic interrelationships; and a general survey of the animal kingdom. BI 101, 102 constitute a coordinated course in general biology, and students are expected to complete both courses. BI 102 may be taken before BI 101. Two lectures and one two-hour laboratory period weekly. *Professor Wall and Staff.*

BI 281 Invertebrate Zoology 3 crs.

Prq.: BI 102 or consent of the instructor.

The biology of invertebrates from a phylogenetic standpoint with emphasis on taxonomy, morphology, histology, physiology, development, and natural history. Representative of the principal classes of each phylum are studied. Two lectures and one two-hour laboratory period weekly. *Professor Wall.*

BI 282 Comparative Chordate Anatomy 3 crs.

Prq.: BI 102 or consent of the instructor.

An ontogenetic and phylogenetic survey is made of chordate gross anatomy, supplemented by laboratory dissections of representative species. Emphasis is placed on the changes in chordate structure and biology that comprise their evolution, and an interpretation made of the whole series of change in the light of our modern knowledge of how evolution is brought about. Two lectures and one two-hour laboratory period weekly. *Instructor to be announced.*

BI 283 Field Natural History 2 crs.

Prq.: BI 101, BI 102 or consent of the instructor.

The identification of local plants and animals with emphasis on the natural history of common animals, dominant biotic communities of Southeastern Massachusetts, general morphology and taxonomy of organisms, and techniques of collecting and preserving. One one-hour lecture and one three-hour laboratory period weekly. *Professor Mish and Staff.*

BI 292 Plant Anatomy 3 crs.

Prq.: BI 101.

A comparative study of the structural, functional, developmental and phylogenetic characteristics of cells, tissues, and organs in the vascular plants with emphasis on the angiosperms. Two lectures and one two-hour laboratory period weekly. *Assistant Professor Hewitson.*

BI 312 Heredity and Human Behavior 3 crs.

Prq.: BI 101.

The principles of genetics which are important to an understanding of the hereditary mechanism in man. Individual differences in relation to gene-environment interaction and the role of heredity in education, governance, and society. Primarily an elective for non-science majors. *Professor Brennan.*

BI 381 General and Comparative Physiology 3 crs.

Prq.: BI 102; CH 131, 132; PH 181, 182; or consent of the instructor.

Physiological principles concerned in irritability, contraction, circulation, gas exchange, excretion, and hormonal regulation. Two lectures and one two-hour laboratory period weekly. *Associate Professor Morin.*

BI 385 Mammalian Physiology 3 crs.

Prq.: BI 102 and consent of the instructor.

General physiological principles and their application to the human body. Two lectures and one two-hour laboratory period weekly. *Associate Professor Morin.*

BI 392 Problems in Biology Credits arranged.

Prq.: consent of the Departmental Chairman.

Individual instruction for advanced students usually involving original research in the biological sciences. Hours arranged. *Professor Howe and Staff.*

BI 393 Genetics 3 crs.

Prq.: BI 101, 102; MA 103, 104; or consent of the instructor.

The basic principles of heredity and variation in plants and animals, with emphasis on problem solving and historical development of the science. Two lectures and one two-hour laboratory period weekly. *Professor Brennan.*

BI 395 Microbiology 3 crs.

Prq.: BI 101, 102; CH 131, 132; or consent of the instructor.

An introduction to the structure, function, and ecology of microorganisms with emphasis on bacteria and viruses. Four lectures and two two-hour laboratory periods weekly for one quarter. *Mr. Schaefer.*

BI 397 Plant Physiology 3 crs.

Prq.: BI 101, CH 131, 132, or consent of the instructor.

The growth and function of plants including cellular physiology, water relations, metabolism, respiration, photosynthesis, nutrition, growth regulation, and the influence of environment. Two lectures and one two-hour laboratory period weekly. *Professor Howe.*

BI 401 Seminar in Biology 1 cr.

Prq.: consent of the instructor.

In-depth consideration of current problems and research in the biological sciences. One period weekly for the first, second, and fourth quarters. *Professor Wall and Staff.*

BI 405 Systematics and Evolution 3 crs.

Prq.: BI 393 or consent of the instructor.

The theory of evolution and the operation of evolutionary forces as related to modern taxonomy, with emphasis on such topics as mutations, variation, hybridization, polyploidy, isolation, natural selection, population genetics, and the Zoological and Botanical Codes. Six periods weekly for one quarter. *Professor Wall and Assistant Professor Hewitson.*

BI 411 Ecology 3 crs.

Prq.: BI 281, 283, 393, 397; MA 103, 104; PH 181, 182; or consent of the instructor.

The dynamics and evolution of populations, communities, and eco-systems. Students become acquainted with the communities of Southeastern Massachusetts through field studies. Two lectures and one two-hour laboratory period weekly for first and fourth quarters. *Professor Cirino.*

DEPARTMENT OF CHEMISTRY

Professor Wilmon Chipman, *Chairman*

Associate Professors: Henry Daley, Jr., Margaret Souza

Assistant Professors: Vahe Marganian, Joseph Pagano

The Department of Chemistry offers two majors in Chemistry and a Chemistry-Geology major, which is offered jointly with the Department of Earth Sciences. The Chemistry-Geology major is listed in the catalog as an Interdepartmental Program in Natural Sciences. Students interested in medicine or dentistry should consult the section of the catalog describing the pre-medical and pre-dental programs. Attention is called to the Interdepartmental Programs in Oceanography. A major in chemistry is excellent preparation for further work in this area.

The Chemistry Department offers two programs leading to the Bachelor of Arts Degree in Chemistry. The first of these, the major in Professional Chemistry, is designed for students who plan to go on to graduate work in chemistry or to do research in the chemical industry. The courses offered in this program meet the requirements of the American Chemical Society for an approved major. Satisfactory performance in this program (B average) will give the student the professional preparation required for an assistantship or fellowship in graduate school.

The second major in Chemistry is designed for students who wish to prepare for secondary school teaching, chemical sales work, medicine, dentistry, pharmacy, oceanography, environmental science, or veterinary science. This program is designed to allow a maximum amount of flexibility in that only a minimum number of chemistry courses are included. The student enrolled in this program may elect more chemistry courses if he desires, or he may elect courses in other sciences or in the Humanities, Social Sciences, or Education. The student need not decide between the programs until the second semester of his sophomore year. Both curricula are structured so that the student achieves a well-balanced liberal education and professional training in his major field.

The major in Professional Chemistry is required to take the following courses: CH 141, 142, (or CH 131, 132), 241, 242, 343, 344, 381, 382, 441, 442, 444, 450; and MA 101, 102, 201, 316; PH 243, 244, 387; LG 101, 102, 191, 192 or LR 101, 102, 151, 152. (German or Russian may be replaced with French with the written permission of the Department.)

The major in Chemistry is required to take the following courses: CH 141, 142, (or CH 131, 132), 241, 242, 343, 344, 381, 382; and MA 101, 102, 201; PH 243, 244; LG 101, 102, 191, 192 or LR 101, 102, 151, 152.

(German or Russian may be replaced by French with the written permission of the Department.)

39

A minor in Chemistry consists of seventeen or eighteen credits in Chemistry, exclusive of CH 200.

The Chemistry Department has recently acquired the following equipment: a Varian T-60 Nuclear Magnetic Resonance Spectrophotometer, with time-averaging device (C-1024); a Perkin-Elmer Model 257 Infrared Spectrophotometer; a Perkin-Elmer Model 202 Ultraviolet Spectrophotometer; Perkin-Elmer Model 154D and Varian Aerograph 1720-1 Gas Chromatographs; a Perkin-Elmer Model 303 Atomic Absorption Spectrophotometer; and a Perkin-Elmer Model 700 Infrared Spectrophotometer. An X-ray Diffraction apparatus is shared with the Department of Earth Sciences. The Chemistry Department has also acquired such necessary equipment as recorders, Malmstadt-Enke Instrumentation Laboratories, pH meters, Spectronic 20's, and standard-taper glassware kits.

CH 131, 132 General Chemistry with Qualitative Analysis I-II

3 crs. for each semester.

The elements and their compounds, with emphasis on structure and its relation to properties. CH 131 is prerequisite to CH 132. Two lecture periods and one two-hour laboratory period weekly. *Staff.*

CH 141, 142 Inorganic Chemistry with Qualitative Analysis I-II

4 crs. for each semester.

Theoretical inorganic chemistry with emphasis on mass-energy relationships in terms of structure and physical laws. Laboratory work emphasizes quantitative techniques. CH 141 is prerequisite to CH 142. Three lecture periods and one four-hour laboratory period weekly. *Staff.*

CH 200 Survey of Chemistry 3 crs.

The fundamental laws of chemistry are studied together with their application to elements and compounds, reactions and properties. Two lecture periods and one two-hour laboratory period weekly. *Staff.*

CH 241 Inorganic Quantitative Analysis 4 crs.

Prq.: CH 132 or CH 142.

The classical and modern methods for the volumetric and gravimetric determination of elements and groups. Three lecture periods and one four-hour laboratory period weekly. *Staff.*

CH 242 Intermediate Inorganic Chemistry 3 crs.

Prq.: CH 132 or CH 142.

The descriptive chemistry, as well as synthesis and reactions, of nontransitional elements and their compounds are studied systematically. Correlations of structure and properties are explained on the basis of modern theories. *Assistant Professor Marganian.*

CH 343, 344 Organic Chemistry I-II 4 crs.

Prq.: CH 132 or CH 142 and consent of the instructor.

A survey of the chemistry of organic compounds organized in terms of structure, mechanism of organic reactions, and synthesis. CH 343 is prerequisite to CH 344. Three lecture periods and one four-hour laboratory period weekly. *Professor Chipman and Associate Professor Souza.*

CH 381, 382 Physical Chemistry I-II 4 crs.

Prq.: CH 132 or CH 142; MA 201.

The laws governing the physical and chemical behavior of compounds. CH 381 is prerequisite to CH 382. Three lecture periods and one four-hour laboratory period weekly. *Associate Professor Daley.*

CH 384 Physical Chemistry II 2 crs.

Prq.: CH 381.

The alternative to CH 382 for students who elect to student teach during the second semester. Differs from CH 382 by the omission of all material on quantum chemistry. Three lecture periods and one four-hour laboratory period weekly for one quarter. *Associate Professor Daley.*

CH 390 Research Problems in Chemistry Credits arranged.

Prq.: consent of the Department

Special projects for advanced students desiring individual instruction in the methods of chemical research. Hours arranged.

CH 392 Laboratory Techniques 3 crs.

Special techniques used in the research laboratory, such as glass-blowing, vacuum line technique, vacuum distillation, dry-box operations and advanced synthetic techniques. Hours arranged. *Instructor to be announced.*

CH 440 Advanced Organic Chemistry 3 crs.

Prq.: CH 344, and consent of the instructor.

Selected topics in advanced organic chemistry, such as physical organic chemistry, alicyclic and heterocyclic chemistry, natural products, and advanced synthetic methods. Hours arranged. *Professor Chipman and Associate Professor Souza.*

CH 441, 442 Qualitative Organic Analysis I-II 3 crs. for each semester.

Prq.: CH 344.

The reactions of organic compounds with emphasis on those of importance for classification and identification. Laboratory work involves the identification of both simple compounds and mixtures. One lecture period and one six-hour laboratory period weekly. *Professor Chipman and Associate Professor Souza.*

CH 444 Advanced Inorganic Chemistry 3 crs.

Prq.: CH 382.

The topics of group theory, stereochemistry, ligand field theory, molecular orbital theory, synthesis and kinetics of reactions as applied to transition metal elements will be treated in detail. CH 382 may be taken concurrently. Hours arranged. *Assistant Professor Marganian.*

CH 450 Instrumental Analysis 3 crs.

41

Prq.: CH 382.

Theory and practical application of instrumental methods are applied to chemical analysis; including pH measurements, electro-deposition, potentiometry, and spectroscopy. CH 382 may be taken concurrently. Two lecture periods and one four-hour laboratory period weekly. *Assistant Professor Marganian.*

CH 461, 462 General Biochemistry I-II 4 crs. for each semester.

Prq.: CH 344, and consent of the instructor.

A survey of the chemical components of living matter and the major processes of cellular metabolism. Three lecture periods and one four-hour laboratory period weekly. *Instructor to be announced.*

CH 480 Special Topics in Physical Chemistry 3 crs.

Prq.: CH 382 and consent of the instructor.

Topics of an advanced nature in physical chemistry will be selected with an emphasis on recent developments in the field. Possible topics: N.M.R., E.S.R., elementary quantum mechanics, statistical thermodynamics. *Associate Professor Daley.*

DEPARTMENT OF EARTH SCIENCES AND GEOGRAPHY

Professor Emanuel Maier, *Chairman*

Professor Agrippina Macewicz

Associate Professors: Robert Boutilier, Ralph Fellows, Ira Furlong

Assistant Professors: Richard Enright, Marilyn Furlong

Instructors: Robert Dillman, Susan Drake

Visiting Lecturers: Richard Lorenz, Joseph Chase, Oceanography (Woods Hole Oceanographic Institution), Leonard Solomon, Astronomy (Itek Corporation)

The Department of Earth Sciences and Geography offers two separate fields of concentration: Geography and Earth Sciences. The program of study for Geography majors is designed to give a student knowledge and appreciation of the physical and cultural attributes of the world in which he lives. The concentration in Earth Sciences aims to introduce students to the various sciences that relate to the physical aspects of the earth and the universe.

Students majoring in geography are required to take the following courses: ES 181, 182, 303, 304, 315, 362, 471, 473; elect two from the following group: ES 192, 301, 306, 484. A total of 35 credits are required. Not more than one D for a semester course shall be accepted for fulfillment of the requirements for the major.

Students majoring in the earth sciences are required to take the following courses: ES 181, 192, 301, 303, 306, 372, 463, 484; and elect three more approved earth science courses. A total of 34 credits are required in the major. Not more than one D for a semester course shall be accepted to fulfill the requirements for the major.

An additional requirement for geography is one course in elementary statistics (MA 110 or equivalent). Additional requirements for earth sciences are: one year of mathematics, one year of chemistry, and one year of either physics or biology.

Attention is called to Interdepartmental Programs in Chemistry-Geology and Oceanography.

Research acquisition of modern laboratory equipment has enabled the Department to begin to offer investigation-oriented laboratory periods. This equipment includes: a Norelco X-ray diffractometer with Love and Debye-Scherrer cameras; rock saw and thin section equipment; polarizing and stereoscopic microscopes; a Perkin-Elmer Model 303 Atomic Absorption Spectrophotometer; Soitest Seismic Refraction Unit; a complete weather station; two telescopes; a Theodolite, surveying equipment; and a modern cartographic laboratory.

ES 181 Physical Geology 3 crs.

The constitution of the earth and the processes acting on and within it. Field trips. May be followed by either ES 182 or ES 192. Two lecture periods and one two-hour laboratory period weekly. *Associate Professor I. Furlong and Staff.*

ES 182 Physical Geography 3 crs.

Selected elements of man's environment such as the atmosphere, climate, soils, and vegetation. Man's role in altering these elements. Field trips. Two lecture periods and one two-hour laboratory period weekly. *Professor Macewicz and Staff.*

ES 192 Historical Geology 3 crs.

Prq.: ES 181.

The origin and evolution of the earth and the life upon it. Two lecture periods and one two-hour laboratory period weekly. *Associate Professor Fellows and Staff.*

ES 200 Fundamentals of Geography 3 crs.

Man-land relationships and the interaction of man with his total environment, including its landforms, atmosphere, climate, vegetation, and soils. Designed especially for students working for a B.S. degree in Elementary Education. Two lecture periods and one two-hour laboratory period weekly. *Assistant Professor M. Furlong and Staff.*

ES 252 Geography of Anglo-America 3 crs.

Prq.: ES 182 or ES 200, or consent of the instructor.

A description and analysis of the relationships between relevant physical and cultural features of regions in the United States and Canada. *Professor Macewicz.*

ES 261, 262 World Regional Geography 3 crs. for each semester.

Geographical context of current social economic and political problems in Europe, the U.S.S.R., the Orient, the Middle East, the Pacific World, Africa, Latin America, and Anglo-America. Geographical features characteristic of each country and their relationship to a functioning political and economic unit. Either semester may be taken independently. *Professor Maier.*

ES 301 Astronomy I 3 crs.

A study of the earth, moon, planets, sun, and other stars and galaxies. New findings of radio astronomy and the uses of earth satellites. Day and evening observations. *Visiting Lecturer Solomon.*

ES 302 Astronomy II 3 crs.

Stars, galaxies, stellar evolution, instrumentation, and cosmology. Day and evening observation. *Visiting Lecturer Solomon.*

ES 303 Meteorology 3 crs.

An analysis of weather elements, atmospheric circulation, fronts, and the instruments that measure and record these phenomena. Two lecture periods and one two-hour laboratory period weekly. *Miss Drake.*

ES 304 Climatology 3 crs.

Prq.: ES 303 or consent of the instructor.

Climatic elements and climatic controls, their areal distribution and effect on man. *Miss Drake.*

ES 305 Introduction to Oceanography 3 crs.

Prq.: BI 101, BI 102, or consent of the instructor.

Survey of marine life forms and of the chemistry of seawater. *Visiting Lecturer Lorenz.*

ES 306 Introduction to Oceanography II 3 crs.

Prq.: MA 101, 102, or 103 and MA 104 or consent of the instructor.

Ocean water temperature, circulation, shore lines, ocean basins, and mineral resources. *Visiting Lecturer Chase.*

ES 315 Cartography 3 crs.

Graphic presentation of geographic data and the latest techniques of map construction. One lecture period and four laboratory periods weekly. *Instructor to be announced.*

ES 353 Urban Geography 3 crs.

Prq.: consent of the instructor.

Geographic aspects of the city including location, function, land use patterns, and tributary areas. *Professor Macewicz.*

ES 354 Field Methods in Urban Geography 2 crs.

Prq.: ES 353.

A geographic analysis of local urban areas and their problems, and the application of concepts learned in ES 353. Hours arranged. *Mr. Dillman.*

ES 358 Geography of Latin America 3 crs.

Physical and cultural patterns of selected countries of South America. Emphasis on current economic and political problems. *Instructor to be announced.*

ES 362 Economic Geography 3 crs.

Simple models and frameworks of the various ways in which man organizes his economic activity. Problems of spatial structure, arrangements and patterns of economic activity. *Mr. Dillman.*

ES 363 Field Methods in Economic Geography 2 crs.

Prq.: ES 362.

The testing of theories and concepts of economic location in the local area. *Mr. Dillman.*

ES 372 Mineralogy 4 crs.

Prq.: ES 181 and CH 132.

Geometrical and X-ray crystallography followed by the determinative mineralogy of ore and rock-forming minerals. Two lecture periods and two two-hour laboratory periods weekly. *Associate Professor Boutilier.*

ES 405 Synoptic Meteorology 3 crs.

Prq.: ES 303.

Investigation of world and local air systems, air masses, and fronts. Weather maps, upper air charts, and basic forecasting techniques. Two lecture periods and one two-hour laboratory period weekly. Not offered in 1970-1971.

ES 407 Air-Photo Interpretation 3 crs.

Physical and cultural patterns on the earth's surface and their recognition on air photographs. One lecture period and two two-hour laboratory periods weekly. Not offered in 1970-1971.

ES 413 Survey of Physical and Historical Geology 3 crs.

The structure and history of the earth as deduced from the study of life forms and their physical environment. Two lecture periods and one two-hour laboratory period weekly. For Biology majors only. *Associate Professor I. Furlong.*

ES 451 Geography of Europe 3 crs.

Prq.: ES 182 or ES 200, or consent of the instructor.

The character of the natural and cultural environments of the geographic regions of Europe. *Professor Macewicz.*

ES 452 Geography of Asia 3 crs.

The physical and cultural patterns of selected countries of Asia. *Instructor to be announced.*

ES 461 Geography of Africa 3 crs.

The physical and cultural features of the African continent with special reference to the emerged political and regional patterns. *Instructor to be announced.*

ES 462 Geology of North America 3 crs.

Prq.: ES 181.

Physiographic provinces of North America in terms of geomorphology and structural relationships. Not offered in 1970-1971.

ES 463 Petrology 3 crs.

Prq.: ES 372.

Megascopic and microscopic classification of rocks and an introduction to petrogenesis. One lecture period and two two-hour laboratory periods weekly. *Associate Professor Boutilier.*

ES 464 Economic Geology 3 crs.

Prq.: ES 181.

Geochemical and physical processes that produce economic mineral deposits. *Instructor to be announced.*

ES 466 Glacial Geology 3 crs.

Prq.: ES 181.

The mechanics of glacial origin and movement, and the erosive and depositional features produced. Emphasis on the Pleistocene of North America. Two lecture periods and one two-hour laboratory period weekly. Not offered in 1970-1971.

ES 471 Seminar in Geography

The historical development of methods, tools, and techniques used in geographic research. Preparation of a research paper on a problem selected from one of the subdivisions of geography. For senior Geography majors. Two periods weekly for three quarters. *Professor Macewicz.*

ES 472 Research in Earth Sciences 3 crs.

Preparation of a research paper in the Earth Sciences. *Instructor to be announced.*

ES 473 Political Geography 3 crs.

Variations of politically organized areas and their relationship to each other. Political behavior from the viewpoint of ethology, i.e., territoriality and aggression. *Professor Maier.*

ES 474 Quantitative Geography 2 crs.

Prq.: consent of the instructor.

The use of statistical techniques, and computer and model building methodology to analyze various spatial phenomena. *Mr. Dillman.*

ES 475 Paleontology 3 crs.

Prq.: ES 181, 192 or consent of the instructor.

A survey of the fossil record stressing the most important invertebrate and vertebrate phyla and their environmental relationships. Two lecture periods and one two-hour laboratory period weekly. *Assistant Professor Enright.*

ES 483 Structural Geology 3 crs.

Prq.: ES 181.

Analysis and origin of rock structures. Two lecture periods and one two-hour laboratory period weekly. *Instructor to be announced.*

ES 484 Geomorphology 3 crs.

Prq.: ES 181 or consent of the instructor.

Relationships between gradational and tectonic forces and the resulting surface configuration of the earth. *Associate Professor I. Furlong.*

DEPARTMENT OF ECONOMICS

Professor Jordan Fiore, *Acting Chairman*

Instructors: Stanley Antoniotti, Richard Freeman

EC 320 Comparative Economic Systems 3 crs.

Analysis of central economic problems faced by nations in organizing economic activity; comparison of theories and institutions of capitalism and liberal socialism. *Mr. Antoniotti.*

EC 400 Economic Principles and Problems. 3 crs.

Significant economic concepts, institutions, and problems of a free enterprise system. *Mr. Antoniotti, Mr. Freeman.*

EC 420 Principles of Investments 3 crs.

Introduction to mechanics of stock market and analysis of various investment media for individual investment portfolios. *Mr. Freeman.*

DEPARTMENT OF EDUCATIONAL SERVICES

Professor Stanley Clement, *Chairman*

Professors: Robert Daniel, V. James DiNardo

Associate Professors: Philip Dooley, David Englund

Assistant Professors: Anthony DeLeo, Marian Doyle, Henry Fanning, Robert Fitzgibbons, Vincent Worden

Instructor: Raymond ZuWallack

The Department of Educational Services provides the service courses in Educational Measurement and Philosophy of Education that are required in all Teacher Preparation programs.

The department also provides a concentration for Elementary majors in Early Childhood Education and in Special Education, as well as elective courses in these areas and in Guidance.

ED 370 Kindergarten Theory and Methods 3 crs.

Prq.: PY 200.

The philosophy of modern kindergarten education including exploration of emerging theories and new approaches. Developmental characteristics and learning styles of the young child are studied and related to initial school experiences designed to foster maximum growth. Curriculum methods and materials are examined and evaluated. Opportunities will be provided to observe the kindergarten child in the classroom. Required of all Elementary majors with Kindergarten-Primary Concentration. *Assistant Professor Doyle.*

ED 372 Success in Beginning Reading 3 crs.

Prq.: PY 200.

A thorough examination of the language and perceptual backgrounds that children bring to the learning tasks of kindergarten and grade one; the initial steps in developing reading and writing skills; and the possibilities for the creative uses of these skills in the primary grades. Consideration will be given to the implications of the factors underlying such labels as "slow-learning," "disadvantaged," "dyslexic," and "language-handicapped" children. Required of all Elementary majors with Kindergarten-Primary Concentration. *Professor Deasy.*

ED 410 Introduction to Special Education 3 crs.

Emphasis on the program for mentally and physically handicapped children, for emotionally disturbed children, and for the academically talented. Equal consideration will be given to the slow learner and the perceptually handicapped. *Assistant Professor DeLeo.*

ED 411 Methods and Materials in Special Education 3 crs.

The planning, developing, and guiding of pupil experiences to attain desired outcomes through the functional application of subject matter. The philosophy, aims, identification and classification, and curriculum development of the educational program for retarded children. *Assistant Professor DeLeo.*

ED 420 Educational Measurement 3 crs.

Prq.: PY 200.

Procedures for developing and evaluating classroom teacher-made tests and a survey of standardized testing practices used in the K-12 program. *Assistant Professor Worden.*

ED 430 Principles and Practices in Guidance 3 crs.

The philosophy and historical development of the guidance movement; the need for guidance; the nature of guidance services in the schools for today; the personnel, facilities, and procedures involved; and the role of the classroom teacher in guidance. Open to all seniors. *Associate Professor Dooley.*

ED 474 Methods and Materials in Primary Education 3 crs.

Prq.: PY 200.

Ways of teaching Primary-Grade children, taking into consideration the basic philosophy of their education and promoting an understanding that each child is a unique individual. Stress on effective organization and management, what to teach,

how to teach, the importance of skill development, the necessity for drill, and the use of practical creative techniques. Required of all Elementary majors with Kindergarten-Primary Concentration. *Assistant Professor Doyle.*

ED 480 Philosophy of Education 3 crs.

An introduction to thinking critically and imaginatively about education through reading and discussion of primary sources. Emphasis is placed on understanding the philosophical presuppositions which underlie educational practices and policies. *Associate Professor Englund, Assistant Professor Fitzgibbons, Assistant Professor Joyal.*

DEPARTMENT OF ELEMENTARY EDUCATION

Professor Stanley Clement, *Acting Chairman*

Professor: John Deasy

Associate Professors: Rita Nadal, Dorothy Wood

Assistant Professors: Margaret Farrell, James Francis, John Kent, Isabelle King

Instructor: Gerald Thornell.

The Department of Elementary Education strives to provide the student with the professional competencies necessary to become an effective elementary teacher, including an understanding of how students learn, and an ability to use appropriate teaching procedures, materials, and evaluation techniques. The most important part of the elementary teacher preparation in the provision for student teaching in actual school situations.

Specific department requirements for students majoring in Elementary Education include ED 330, 340, 350, 390, 462, and 490.

In addition to general education requirements, courses required in other departments include: ED 420, ED 480, AV 310, and PE 330.

Elementary majors must have a concentration in one of the following fields: English, Speech, Art, Music, Modern Languages, History, Urban Education, Anthropology, Psychology, Sociology, Biology, Earth Science, Chemistry, Physics, Physical Science, Mathematics, Library Science, Kindergarten-Primary, Special Education, Instructional Media, or Physical Education. This concentration will consist of at least nine semester hours credit beyond the general education requirements.

ED 330 Teaching of Reading in the Elementary School 3 crs.

Prq.: PY 200.

A consideration of how reading instruction is initiated, how basic reading abilities are developed, and how growth in voluntary reading is encouraged. The essentials of an effective developmental reading program will be examined with attention to

organizing groups and evaluating progress. *Professor Deasy, Associate Professor Francis, Assistant Professor King.*

49

ED 340 Methods and Materials in Elementary Language Arts 3 crs.

Prq.: PY 200.

Stress on the new language-focused approach to English and the modern concepts of English grammar and usage. Creative strategies and ideas in teaching the skills and abilities of listening, speaking, and writing. *Associate Professor Wood, Associate Professor Nadal.*

ED 350 Methods and Materials in Elementary Mathematics 3 crs.

Prq.: PY 200 and MA 107.

Acquaintance with the purpose and content of the contemporary elementary school mathematics curriculum. A wide variety of effective teaching procedures and instructional materials designed to meet the varying abilities within the elementary school classroom. *Instructor to be announced.*

ED 390 Supervised Student Teaching in the Campus Schools 6 crs.

Prq.: PY 200.

The Campus Schools serve as laboratories in which students engage in the directed study of children in learning situations as they are encountered in a modern school. As the study progresses, students participate increasingly in the activities of the school to the point at which they can undertake the duties of the room teacher. Included are several hours of weekly conferences with the supervising teachers, and weekly seminars with specialists in the fields of art, music, speech, and physical education. One half-day for one semester. *Assistant Professor Kent and Staff.*

ED 454 Seminar in Elementary Education 3 crs.

A culmination of all professional experiences in preparation for teaching. Included are review and evaluation of current elementary school practices, discussion of professional ethics and school law, professional growth opportunities, procedures for securing a teaching position, and preparation for and the responsibilities of the first teaching position. Open to all Senior Elementary majors. *Assistant Professor Kent and Staff.*

ED 462 Science and Social Studies Methods and Materials in Elementary Schools 3 crs.

Prq.: PY 200.

The goals of scientific inquiry and responsible citizenship. The establishment of objectives and the selection of appropriate methods, materials, and techniques of planning to meet these objectives. Current trends in the teaching of both science and social studies. Innovative ideas found in the newer programs. *Assistant Professor Farrell, Mr. Thornell.*

ED 490 Supervised Teaching in the Public Schools 6 crs.

Continuous supervised experiences in all classroom activities. Experience is gained in the study of individual differences, teaching techniques, and classroom management. Supervision is given by the classroom teacher and by members of the college

faculty. Students are expected to carry a minimum responsible teaching load equal to 50% of the regular classroom teacher's assignment. Full time for one quarter. Also required of all Secondary majors with an Education minor. *Assistant Professor Francis and Staff.*

DEPARTMENT OF ENGLISH

Professor Harold Ridlon, *Chairman*

Professors: Barbara Chellis, Samuel Sheinfeld

Associate Professors: Joseph DeRocco, Frances Guerin, Mary Jarvis, Virginia Joki, Charles McGinnis, Joseph Yokelson.

Assistant Professors: Marcia Anderson, Harold DeLisle, Gutala Krishnamurti, James Nerney, Tom Watson, Clifford Wood.

Instructors: Charles Angell, John Porter, Phyllis Toback.

The program of study for English majors aims to give students an acquaintance with the history and background of English and American literature, an understanding of great literary works, and the ability to analyze, interpret, and appreciate what they read.

A grade of C or above in EN 101, 102 is a prerequisite for continuation as an English major. Students majoring in English may well wish to take the following courses: EN 200, or its equivalent in composition above the elementary level; 221, 241, 305, 331 or 332; a minimum program for the major includes, in addition to EN 101, 102, 3 semester hours in each of the following: English literature before 1800; English literature after 1800; and American literature. The total for the major is not less than 36 credits which may include the general education requirements of EN 101, 102, and 3 semester hours of literature.

EN 101, 102 English Composition 3 crs. for each semester.

The aim of English Composition is to develop greater awareness of the potential of the language, to encourage responsibility for its more effective use, and to provide opportunity for frequent directed practice in writing. Through the use of literary models such as essay, poem, short story, novel, and drama, students will be trained to think, speak, read and write more effectively. EN 101 is prerequisite to EN 102. *Professor Ridlon and Staff.*

EN 200 Advanced Composition 3 crs.

Expository writing is taught through frequent practice, analysis of models, and criticism by instructor and students. Opportunity is available for the student to develop his writing in any specific area he chooses, but emphasis will be on satire, argument, critical analysis, exposition, and description. Some attention will be given to the major developments in English prose style since 1600. *Associate Professor DeRocco and Staff.*

EN 201 Writing and the Teaching of Writing 3 crs.

Writing, criticism, creativity. Student participation in criticism as a learning device and as a means to a reasonable load for the teacher. Objective is to improve the student's writing skill by the same techniques he can use in teaching the skill. Text by Don Murray. *Assistant Professor Nerney.*

EN 211, 212 Literary Classics of Western Civilization

3 crs. for each semester.

Through classic examples of epic, myth, sacred history, parable, allegory, tragic and comic drama, philosophical dialogue, satire, lyric, and novel, the student will be introduced to the principal literary forms through which great writers, from ancient times to the twentieth century, have contributed to the religious, intellectual, moral, and esthetic traditions of Western culture. *Associate Professor Guerin.*

ES 215 Comparative Drama 3 crs.

A study of plays of different periods dealing with the same mythological or historical themes. Included will be plays on the Oedipus theme, from Sophocles to Cocteau; plays about the House of Atreus, from Aeschylus to Sartre; plays about Antony and Cleopatra, from Shakespeare to Shaw; and plays about Joan of Arc, from Schiller to Anouilh. The larger purpose of the course will be to explore the freedom within limits of an artist who chooses to work with established plot materials. *Assistant Professor Anderson.*

EN 221, 222 Major English Writers 3 crs. for each semester.

Representative works by the major English writers will be studied both formally and historically to develop an understanding of the genres, styles, and themes which characterize English imaginative and critical writing. The first semester will examine works from the Anglo-Saxon period to the eighteenth century; the second, works of the nineteenth and twentieth centuries. *Associate Professor Yokelson and Staff.*

EN 225 The Theme of Love 3 crs.

Various literary treatments of the theme of love will be approached through such works as the following: Chaucer, *Troilus and Criseyde*; Donne, Poetry; Shakespeare, *Romeo and Juliet*, *Antony and Cleopatra*; Dryden, *All for Love*; Byron, *Don Juan*, Cantos I-IV; Bronte, *Wuthering Heights*; Browning, Poems; Henry James, *The American* or *The Portrait of a Lady*; Lawrence, *Sons and Lovers*; Hemingway, *A Farewell to Arms*. *Associate Professor Yokelson.*

EN 230 Creative Writing 3 crs.

Fiction, non-fiction, verse, drama or any experimental forms may be undertaken by the student. Class discussions will center on the examination of both professional and student efforts. Frequent conferences will be held with individual students. *Assistant Professor DeLisle.*

EN 231, 232 Major American Writers 3 crs. for each semester.

A general survey of American Literature from the colonial beginnings to the present. Writers such as Franklin, Edwards, Irving, Poe, Hawthorne, Emerson, Whitman, Dickinson, Twain, James, Frost, Eliot, Faulkner, and Hemingway will be studied in their social and cultural contexts. *Assistant Professor Anderson and Staff.*

EN 235 The Short Novel 3 crs.

Prq.: consent of the instructor.

Works selected from such writers as Conrad, James, Faulkner, Mann, Kafka, and Dostoevsky. *Professor Sheinfeld.*

EN 241 Shakespeare 3 crs.

A general introduction to Shakespeare's plays set against the background of the times. Representative selections from the tragedies, comedies, and histories will be studied in detail. *Associate Professor McGinnis.*

EN 260 Literature of the Continental Renaissance 3 crs.

Selected works of Petrarch, Boccaccio, Machiavelli, Erasmus, Castiglione, Rabelais, Cellini, Montaigne, Cervantes, and Ronsard representing prevailing literary themes and techniques. Lectures and discussions on the art, history, philosophy, and music of the age will be offered by faculty in these disciplines. *Assistant Professor DeLisle.*

EN 280 Journalism 2 crs.

Students will be helped to develop skills in copyediting and proofreading with special emphasis given to objective news story writing. Some attention will be given to dramatic criticism and sports writing. The workshop approach will be used. *Professor Chellis.*

EN 305 History of the English Language 3 crs.

Origins and development of English. Selected readings in Old and Middle English. *Professor Sheinfeld.*

EN 311 The Negro in U.S. Literature 3 crs.

Prq.: EN 231 or EN 331 or consent of the instructor.

Autobiographies and fiction beginning chronologically with *The Life of Frederick Douglass*, with particular attention paid to *Uncle Tom's Cabin*, *Native Son*, and *Invisible Man*. *Professor Chellis.*

EN 312, 313 Studies in Modern British Fiction 2 crs. for each quarter.

Prq.: EN 222 or consent of the instructor.

Readings in selected twentieth-century British novelists. First quarter: E. M. Forster and D. H. Lawrence. Second quarter: James Joyce and Graham Greene. Not offered in 1970-1971.

EN 314 Medieval English Literature 2 crs. for each quarter.

Prq.: EN 211, or EN 221 or consent of the instructor.

Selected readings in non-Chaucerian writing: Langland, Gower, romance, lyrics, drama. Four periods weekly each quarter. *Associate Professor Jarvis.*

EN 320 Chaucer 3 crs.

Prq.: EN 222 or consent of the instructor.

Troilus and Criseyde and selected readings from the *Canterbury Tales*. Not offered in 1970-1971.

EN 322 The Age of Pope 3 crs.

The literature of the neo-classical period, with emphasis on the works of Pope, Swift, Gay, Addison and Steele. *Professor Ridlon.*

EN 323 Linguistics 2 crs.

The generative-transformational theory of syntactic structures as applied to the English language. Selected readings on various aspects of linguistics. Four periods weekly for one quarter. *Professor Sheinfeld.*

EN 324 Linguistic History of the English Language 2 crs.

Readings and linguistic analysis of Old, Middle, and Modern English. Four periods weekly for one quarter. *Professor Sheinfeld.*

EN 330 Modern American Fiction 3 crs.

Prq.: EN 232 or consent of the instructor.

Selected readings in Fitzgerald, Hemingway, and Faulkner. *Associate Professor Yokelson.*

EN 331 U.S. Literature in the Nineteenth Century 3 crs.

Selected readings in C. B. Brown, Cooper, Hawthorne, Poe, Emerson, Thoreau, Whitman, and Dickinson. *Professor Chellis.*

EN 332 U.S. Literature in the Nineteenth Century 3 crs.

Prq.: EN 231 or EN 331.

The novels and tales of Melville, Twain, Hawthorne, and James. *Professor Chellis.*

EN 335 Elizabethan and Jacobean Drama 3 crs.

Reading and discussion of a number of plays with attention to contemporary social developments as well as to the historical development of the English play. *Associate Professor Jarvis.*

EN 338 The Short Story 3 crs.

The primary focus will be on the examination of the relationship between form and content in several British, American, and continental short stories. A secondary concern will be the historical development of the genre. *Assistant Professor DeLisle.*

EN 340 Literature of the English Renaissance 3 crs.

The non-dramatic literature of the Age of Shakespeare including the reading of works by such writers as Sidney, Spenser, Nashe, Marlowe, and Drayton. Although the emphasis will be on textual analysis, the historical, social, and cultural background of the period will also be considered. *Professor Ridlon.*

EN 346 Southern Literary Renaissance 2 crs. for each quarter.

Beginning with the Fugitives in the 1920's (Robert Penn Warren, Allen Tate, John Crowe Ransom, and Donald Davidson primarily) and their concern with the problem of the Southern writer's identity as both a Southerner and an artist, the focus will center on the writings of such contemporary figures as William Faulkner, Tennessee Williams, Katherine Anne Porter, Flannery O'Connor, Carson McCullers, Eudora Welty, and Peter Taylor. Four periods weekly for each quarter. *Assistant Professor Watson.*

EN 350 Modern English Novel 2 crs. for each quarter.

A selective survey of major contributors to the English novel from Joseph Conrad through the school of the "Angry Young Men." Major attention will be given to the analysis of specific texts. Four periods weekly for each quarter. *Associate Professor Yokelson.*

EN 353, 354 Modern European Drama 2 crs. for each quarter.

Main forces in Modern European drama starting with Ibsen. Four periods weekly for each quarter. *Associate Professor Guerin.*

EN 356 Modern American Drama 3 crs.

Selected plays of dramatists from O'Neill to Albee. *Associate Professor Guerin.*

EN 360, 361 The English Novel 3 crs. for each semester.

The development of the English novel, including the works of Defoe, Richardson, Fielding, Smollett, Sterne, Austen, and Scott in the first semester, and Dickens, the Brontes, Thackeray, Eliot, Trollope, Conrad, and Hardy in the second semester. *Mrs. Toback.*

EN 365 Victorian Prose and Poetry 3 crs.

The major emphasis will be placed on the poetry of Tennyson, Browning, and Arnold, but the works of other nineteenth-century poets such as Hopkins and Hardy will also be read and discussed. The essays of Carlyle, Arnold, Newman, Huxley, and others will be read in conjunction with the poetry. *Assistant Professor DeLisle.*

EN 383 Modern Irish Literature 2 crs. for each quarter.

Irish writing from 1890 to the present, with special emphasis on the works of Yeats, Synge, O'Casey, Joyce, O'Connor, and O'Faolain. Four periods weekly for each quarter. *Assistant Professor Gannon.*

EN 386 English Romantic Poets 2 crs. for each quarter.

Selected poetry and prose of Wordsworth, Coleridge, Shelley, and Keats will be studied with the principal object of understanding the character and modes of expression of each poet's imaginative vision. Consideration will be given to historical background and to developments in philosophy and esthetic theory which have a direct bearing on Romantic poetry. Four periods weekly for each quarter. *Associate Professor DeRocco.*

EN 387 Indo-Anglian Literature 2 crs. for each quarter.

Literature written in English by Indian writers. The emphasis will be on fiction, particularly the novels and short stories dealing with the conflict between old and new in Indian national life. Four periods weekly for each quarter. *Assistant Professor Krishnamurti.*

EN 390 Literary Criticism 3 crs.

The history of literary criticism from Aristotle to the present. Emphasis will be placed on those persistent esthetic, psychological, social, and cultural patterns which have helped shape the literature of our own age. *Associate Professor DeRocco.*

EN 391 Modern Literary Criticism 3 crs.

Several twentieth-century critical approaches to literary analysis, interpretation, and evaluation. Particular attention will be given to literary concepts derived from psychoanalysis, sociology, anthropology, semantics, philosophy, and theology. Such topics as existentialist criticism, the "new criticism," and the theory of myth and symbol will be considered. *Associate Professor DeRocco.*

EN 393 Modern British Poetry 2 crs. for each quarter

The major British poets of the twentieth century, with particular emphasis on the works of Hopkins, Yeats, Eliot, and Thomas. Four periods weekly for each quarter. *Associate Professor Joki.*

EN 394 Modern American Poetry 2 crs. for each quarter.

The major American poets of the twentieth century, with particular emphasis on the works of Robinson, Frost, Crane, Auden, Williams, and Stevens. Four periods weekly for each quarter. *Associate Professor Joki.*

EN 400 Techniques of Literary Research 3 crs.

Research procedures, with special reference to the materials and methods of literary study and publication. Various critical approaches to literature will be examined, and some evaluation of scholarly procedure will be made. *Professor Ridlon and Staff.*

EN 492 Reading and Research Credits arranged.

Independent study under the guidance of individual members of the department. To be considered for admission, one must be a senior of honors standing and must submit a general proposal for a topic or area of study. *Professor Ridlon and Staff.*

EN 495 Seminar 3 crs.

The topics explored and the areas covered in this seminar will vary from year to year. In 1970-1971, the topic will be "Yeats and Eliot." *Associate Professor Joki.*

Humanities Elective**HU 201 Comparative Religion 3 crs.**

An examination of the origins, development, and basic tenets of the major world religions from earliest times to the Moslem era, with particular emphasis on ancient Near Eastern religions, Judaism, Christianity, and Islam. *Mr. Christensen.*

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION FOR MEN

Associate Professor Harry Lehmann, *Chairman*

Associate Professor Edward Swenson

Assistant Professor Thomas Knudson

Instructors: Edward Braun, Peter Mazzaferro, Joseph Yeskewicz

This department offers practice and theory courses designed to improve physical fitness, provide experience in a variety of individual and team activities, and develop basic concepts in health, first aid, and physical education. The opportunity is provided for men to participate in a variety of intramural and intercollegiate athletic activities and to prepare for coaching several team sports.

All men in the Bachelor of Arts curriculum are required to complete successfully the following courses: HE-M 110, PE-M 123, or 124, 223 and 224. All men in the Bachelor of Science curriculum are required to complete successfully the following courses: HE-M 110, PE-M 123, or 124, 223, 224, and 220.

HE-M 110 Personal Health 2 crs.

The study of health as it concerns the adult; common attitudes and practices and their importance in happy and effective living; current problems; school and public health responsibilities. *Associate Professor Lehmann.*

PE-M 123, 124 Physical Education Activities for Freshmen 0 crs.

Aquatics, team sports, vigorous fitness type activities, and individual and dual activities are included. Two periods weekly. *Associate Professor Swenson and Staff.*

PE-M 223, 224 Physical Education Activities for Sophomores 0 crs.

Continued emphasis on physical fitness and the development of fundamental skills. Opportunity provided to select some activities from categories indicated in PE-M 123, 124. Two periods weekly. *Associate Professor Swenson and Staff.*

PE-M 301 Methods and Techniques in Coaching Football 1 cr.

Open to students who have completed their physical education requirements. *Mr. Mazzaferro.*

PE-M 302 Methods and Techniques in Coaching Baseball 1 cr.

Open to students who have completed their physical education requirements. *Associate Professor Lehmann.*

PE-M 303 Methods and Techniques in Coaching Swimming 1 cr.

Open to all students who have completed their physical education requirements and have an American Red Cross Senior Life Saving Certificate. *Mr. Yeskewicz.*

PE-M 310 Methods and Techniques in Coaching Basketball 1 cr.

Open to all students who have completed their physical education requirements. *Assistant Professor Knudson.*

PE-M 320 Methods and Techniques in Coaching Soccer and Track and Field 1 cr.

Open to all students who have completed their physical education requirements. *Associate Professor Swenson.*

PE-M 330 Methods and Materials and First Aid 2 crs.

Emphasis placed on first aid and teaching physical education in the elementary school. *Assistant Professor Knudson, Mr. Mazzaferro.*

**DEPARTMENT OF HEALTH AND
PHYSICAL EDUCATION FOR WOMEN**

57

Chairman to be announced.

Associate Professor Mary Thornburg

Assistant Professors: Patricia Phillips, Sharon Tufts

Instructors: Ann Coakley, Katherine Ekas, Regina Gross, Virginia Hogg, Shirley Krasinski, Marjorie Rugen, Hazel Schopp, Johanne Smith, Carol Wolfram, Lynne Yeamans.

The Department of Health and Physical Education for Women offers instruction in recreational skills, physical conditioning, and health for all college women. Regular participation in activities is encouraged through required courses and extra-class activities in order that the student may develop interest and skills that she can enjoy in her leisure time.

The Department of Health and Physical Education offers a professional curriculum in Health and Physical Education for Women. The student completing this course receives a Bachelor of Science in Education degree, with a major in Health and Physical Education. The basic program is planned to satisfy the needs of the student who will teach in the public schools; it includes sufficient work in health education to enable her to qualify for positions which require the teaching of both physical education and health education. Through varied activities in the classrooms, the gymnasium, and the playing fields, the students are given the opportunity to acquire scientific knowledge, specialized skills, principles, and evaluative procedures.

The concentration in Physical Education for Elementary Education Majors is deemed essential for the establishment of a strong foundation for physical and motor fitness. The objectives include an understanding of the functions of the human body relating to movement as well as planned progressions in skill learning at the elementary school level. This curriculum is designed to provide knowledgeable and capable leadership in physical education on the part of the classroom teacher by preparing future teachers to meet the needs of children.

SERVICE COURSES

HE 110 Personal Health 2 crs.

Attitudes and practices as they influence effective living; common adult health problems; community health services and adult responsibility. *Assistant Professor Phillips, Mrs. Hogg.*

PE-W Physical Education Activities for Freshmen and Sophomores 0 crs.

Team and individual sports: archery (112), bowling (100), basketball (105, 205), badminton (150, 250), field hockey (107), folk dance (109), golf (120), lacrosse (104), skiing (108), tennis (114, 214) volleyball (140), and softball (122); rhythmic activities: folk dance (109), modern dance (103), and square dance (110); gymnastics (160, 260); individual program (200); aquatics: swimming (130, 230), life saving (135), and water safety instructor (232). Opportunities are provided for students to select activities according to their needs, interests, and individual abilities. The second course number after an activity indicates an advanced course. Swimming is required of all students who do not show a specific level of proficiency. Two periods weekly for three semesters. *Miss Coakley and Staff.*

PE 330 Methods and Materials and First Aid 2 crs.

An introduction to the philosophy, objectives, and activities of the elementary physical education program with emphasis on the part played by the classroom teacher. Provision for visits to the Campus Laboratory School. *Mrs. Schopp.*

HE 410 School Health and Safety Education 2 crs.

The needs of the child in grades K-12 are studied in relation to his health, safety, and physical activity. The responsibility of the school system in meeting these needs is analyzed and the total school health program discussed. Emphasis is placed upon the role of the classroom teacher and other specialists involved in teaching these children. *Mrs. Hogg.*

MAJOR CURRICULUM IN HEALTH AND PHYSICAL EDUCATION FOR WOMEN**PE Activities for Freshmen Health and Physical Education Majors 6 crs.**

Team and individual sports: basketball (131), field hockey (133), lacrosse (128), soccer (138), and badminton (126); rhythmic activities: creative rhythms (141), folk dance (142), modern dance (144), and square dance (149); gymnastics (106); swimming (125); track and field (127). Beginning skills and techniques of play are emphasized in the team and individual sports classes. Creative rhythms involves movement exploration with rhythmic accompaniment for the elementary school level. Folk dance introduces the steps and teaching techniques of dances of the other lands for elementary school level. Modern dance involves basic dance techniques and the creation of single dances. Square dance introduces the structure formation, and current basics and figures used in apparatus skills with the important safety factors. Swimming follows the American Red Cross progressions according to individual ability. Track and field introduces all events as well as analyzing skills, techniques of teaching, and the conduct of a meet. Six periods weekly for two semesters. *Staff.*

HE 151 Personal and Community Health 3 crs.

Attitudes and practices as they influence effective living; common adult health problems; community health standards and services; special problems of concern in the area of community health. *Assistant Professor Phillips.*

HE 161 Introduction to Physical Education 2 crs.

Basic information concerning the scope and significance of Physical Education as a profession. *Miss Coakley.*

HE 171, 172 Anatomy 2 crs. for each semester.

Includes a fundamental study of the human body and its parts, with special emphasis on bones, muscles, and tissues. HE 171 is prerequisite to HE 172. *Instructor to be announced.*

PE Activities for Sophomore Health and Physical Education Majors 4 crs.

Prq.: Badminton (126), lacrosse (148), folk dance (142), modern dance (144), gymnastics (106).

Team and individual sports: tennis (228), softball (238), badminton (226), and lacrosse (246); rhythmic activities: folk dance (241), modern dance (244); gymnastics (202); and games (211). Tennis and softball introduce beginning skills and techniques of play. Badminton emphasizes advanced skills, singles and doubles strategy, and teaching techniques. Lacrosse continues the development of skills, elements of team play and strategy in both singles and doubles play and teaching techniques. Folk dance introduces steps and teaching techniques of dances from other countries for secondary level. Modern dance includes advanced techniques and beginning elements of composition. Gymnastics continues the development of basic and intermediate tumbling and apparatus skills with increased emphasis on teaching techniques. Games present techniques and skills for games of low and high organization, grades 1–12. *Staff.*

HE 254 Methods in Health Education and First Aid 3 crs.

Selection of content for health courses; analysis of the learning and teaching process as applied to health education; development of safety consciousness and skill in caring for injuries. *Assistant Professor Phillips, Miss Rugen.*

PE 261 Officiating 3 crs.

Prq.: PE 131 and PE 133 or consent of the instructor.

General techniques with emphasis on field hockey and basketball. Practical as well as theoretical examinations are included with opportunities to earn recognized ratings. Four periods weekly. *Associate Professor Thornburg.*

PE 265 Elementary Physical Education 3 crs.

Suggested methods and techniques for teaching appropriate activities at the different grade levels. Opportunity for practical application of teaching principles with pupils of the Campus Laboratory School. Required of sophomore physical education majors. Four periods weekly. *Mrs. Schopp.*

PE Activities for Junior Health and Physical Education Majors 4 crs.

Prq.: tennis (228), basketball (131), field hockey (133), swimming (125), gymnastics (202), square dance (149).

Team and individual sports: golf (321), tennis (328), basketball (332), and field hockey (333); swimming (323); gymnastics (328); square dance (347); and electives (345–349). Golf stresses teaching techniques and skill development. Tennis includes advanced skills, strategy, and teaching techniques. Field hockey and basketball develop team play, strategy, advanced skills, and coaching techniques. Gymnastics emphasizes skills at the intermediate level and the composition of routines in all areas. Square dance presents opportunities for calling basics with stress given to voice, styling, timing, and teaching. *Staff.*

PE 352 Adapted Physical Education 3 crs.

A diversified program of developmental activities suited to the interests, capacities, and limitations of students with disabilities who may not safely or successfully engage in unrestricted participation in the vigorous activities of the general physical education program. Practical application will be offered. Four periods weekly. *Miss Smith.*

PE 363 Secondary School Physical Education 3 crs.

Prq.: PE 265.

The learning patterns, educational philosophies, and modern principles of concern for the secondary school physical education teacher are explored. Observation experiences of several types are provided. *Associate Professor Thornburg.*

PE 367 Evaluation in Physical Education 3 crs.

Principles of effective evaluation. Application of principles through choice and administration of tests and other measurement devices. Interpretation and use of obtained results. *Miss Wolfram.*

HE 372 Applied Anatomy and Kinesiology 3 crs.

Prq.: HE 171, 172, PH 200.

Detailed anatomical and mechanical analyses of fundamental motor skills. *Assistant Professor Tufts.*

ED 392 Supervised Student Teaching in the Campus Laboratory School 3 crs.

A professional semester of supervised teaching experiences in the major areas of physical education for elementary school children. Open to juniors majoring in Health and Physical Education. *Mrs. Schopp and Staff.*

PE Activities for Senior Health and Physical Education Majors 4 crs.

Prq.: golf (321), gymnastics (106, 202, 308).

Team and individual sports: archery (425), volleyball (439), bowling (444), golf (422) gymnastics (405), and three electives (445-449). Bowling emphasizes basic skills and scoring techniques of candlepin bowling with an exposure to duck pin and ten pin bowling. Volleyball involves basic and advanced skills, scoring, officiating, strategy, and teaching techniques. Golf II provides an opportunity to employ basic skills on a golf course. Archery includes beginning skills and teaching techniques. *Staff.*

PE 443 Perceptual Motor Learning and Gymnastics 3 crs.

Introduction to perceptual motor functioning of elementary school children with supervised opportunities to analyze knowledge and apply practical experiences. Gymnastics at the elementary school level will give primary consideration to teaching and spotting techniques. Two lecture and two laboratory periods weekly. *Mrs. Ekas and Miss Smith.*

HE 451 School Health Administration and Safety 3 crs.

Prq.: HE 110 or HE 151.

Includes school health environment, services, and instruction with special emphasis on pertinent health problems. *Instructor to be announced.*

PE 465 Administration and Supervision of Physical Education 3 crs.

Philosophies, policies, procedures of administration, and supervision of physical education programs. Pertinent problems of the contemporary physical educator. *Miss Coakley.*

PE 467 Problems in Health and Physical Education 3 crs.

Research techniques are introduced and opportunities provided to utilize these techniques through individual projects. *Associate Professor Thornburg.*

PE 471 Physiology of Exercise 3 crs.

Prq.: BI 385.

Includes the study of various systems, their interrelationships and adjustments during exercise and as a result of training. Emphasis is on current research findings and what remains to be discovered in man as a moving being. *Assistant Professor Tufts.*

CONCENTRATION IN HEALTH AND PHYSICAL EDUCATION FOR ELEMENTARY MAJORS

PE 334 Rhythmic Analysis in Dance and Related Movement 3 crs.

Prq.: 3 semesters of PE activities.

Emphasis on relationship of rhythm and basic dance skills, composition of dances, motor skills performed to music or to rhythm, and methods of teaching folk, round, and square dance. *Assistant Professor Phillips.*

PE 335 Analysis of Movement Skills for Elementary Schools 3 crs.

Prq.: 3 semesters of PE Activities, PE 330, PE 370.

Performance of fundamental movement skills and sports skills through required lecture and directed laboratory experiences. Two lecture and two laboratory periods weekly. *Miss Krasinski.*

PE 420 Scientific Foundations of Physical Education 3 crs.

Prq.: PY 224, PE 330.

Integration of the concepts of anatomy, kinesiology, and physiology of exercise relative to a program of elementary physical education. Application is made to the characteristics of growth and development of children in structuring physical activity to their needs. *Assistant Professor Tufts.*

Elective

PE 340 Recreation in the United States 3 crs.

The history of recreation and its impact on society today and in the future; school camping, camp counseling, outdoor recreation, and recreation in the elementary school program. *Miss Gross.*

DEPARTMENT OF HISTORY

Professor Jordan Fiore, *Chairman*

Commonwealth Professor Annabelle Melville

Professors: Ralph Bates, Jane Herrick, Stephanie Husek

Associate Professors: William Cole, Jr., Donald Keay, Mary Noel, Maurice Rotstein, Benjamin Spence

Assistant Professors: Guy Clifford, Gerald Doiron, Dennis Lythgoe, John Myers, Arthur Oien

Instructors: Duane Christensen, Lucille O'Connell, Philip Silvia, Jr., Jean Stonehouse, Alfred Wolff, Richard Yin

The department has four objectives: 1) to contribute to the general education program by offering history courses to all students in their first two years; 2) to prepare students planning to teach history on the secondary level; 3) to provide a breadth in history enabling students to do graduate work in the field of history; and 4) to offer advanced courses to those majoring in the elementary curriculum to enable them to enrich the teaching of history at that level.

History program for Bachelor of Arts

All B.A. students normally take HI 111, 112 in the Freshman year and may, as part of their Social Science requirements, take HI 221, 222 in the Sophomore year. However, those who do not elect HI 221 must take PO 273 in addition to their other Social Science courses.

Those majoring in history, after completing HI 111, 112, 221 and 222 (for a total of 12 credits), will continue to take 12 to 24 additional credits in advanced history courses in their third and fourth years. Among these, in the senior year, each student will include one seminar. All history majors are required to take at least 9 credits in non-United States history.

Those who wish to combine courses from other areas with history as a major concentration may do so with the approval of the department chairman. Non-history majors may take advanced courses in history provided they have already completed HI 112, 222.

History program for Bachelor of Science in Elementary Education

This normally includes HI 111, 112 in the Freshman year and HI 221 in the first half of the Sophomore year. Students may, in addition, take HI 222 as part of their general education requirements.

HI 111 Western Civilization to 1715 3 crs.

A historical survey of developments which have molded our culture from ancient times down to the establishment of absolutism. *Professor Fiore and Staff.*

HI 112 Western Civilization since 1715 3 crs.

Prq.: HI 111.

Continuation of the survey begun in HI 111 down to contemporary times. *Professor Fiore and Staff.*

HI 221 United States and Constitutions to 1865 3 crs.

Development of the nation from the age of exploration to the end of the Civil War. *Professor Fiore and Staff.*

HI 222 United States History since 1865 3 crs.

Continues the study begun in HI 221 down to the present. *Professor Fiore and Staff.*

HI 315 Nineteenth Century Europe 3 crs.

From the Napoleonic era to the eve of the First World War. *Associate Professor Rotstein.*

HI 316 Twentieth Century Europe 3 crs.

Particular focus on background, development, and effects of the two world wars. *Associate Professor Rotstein.*

HI 317 British Political History since 1603 3 crs.

England and her empire to 1815 with stress on parallel developments in American history, including economic and social factors. *Commonwealth Professor Melville.*

HI 318 British Empire and Commonwealth since 1815 3 crs.

Political development to the present with emphasis on the rise and fall of the Second Empire. *Commonwealth Professor Melville.*

HI 319 Topics in British History 3 crs.

Primarily for majors in English. Selected areas of political, economic and social British life which nurtured the national literature. *Commonwealth Professor Melville.*

HI 321 Topics in Recent American History 3 crs.

Prq.: HI 222.

The isolationism and boom of the 1920's, the New Deal, World War Two, and the postwar period. *Associate Professor Spence.*

HI 325 American Labor History 3 crs.

The pre-industrial and industrial periods. Emphasis on the reciprocal relationships of workingmen, Negroes, immigrants, and urbanization and industrialization. *Associate Professor Cole.*

HI 326 The American West 3 crs.

The westward movement, emphasizing the distinctive character of that region in its economic, social, political, and intellectual life. *Assistant Professor Lythgoe.*

HI 327 The American South 3 crs.

Sectionalism; its causes and consequences; factors which made the South distinctive; emphasis on race relations, the Civil War and Reconstruction, agrarianism, industrialization. *Mr. Wolff.*

HI 333 Spanish America: the Colonial Period 3 crs.

Indigenous peoples of the area; exploration and conquest; institutional development of the empire to the revolts against Spain in the nineteenth century. *Professor Herrick.*

HI 334 Spanish America: the National Period 3 crs.

Prq.: HI 333.

From the revolutions against Spain to the present. Concentration on Mexico and two or three other states. *Professor Herrick.*

HI 343 The Ancient World: Near East and Greece 3 crs.

From prehistoric times to the Hellenistic empires. *Associate Professor Noel.*

HI 344 The Ancient World: Rome 3 crs.

From its beginnings to the barbarian invasions. *Associate Professor Noel.*

HI 353 Historiography 3 crs.

Prq.: Admission with consent of the Department Chairman and the Instructor. Writings of major historians; evaluation through professional journals and book reviews. Limited to fifteen. Students are expected to elect HI 354. *Commonwealth Professor Melville.*

HI 354 Study and Writing of History 3 crs.

Prq.: HI 353. Admission with consent of the Department Chairman and the Instructor.

The techniques of historical research and preparation of papers requiring such techniques. Analysis and evaluation of source materials will be stressed. *Commonwealth Professor Melville.*

HI 411 History of Russia 4.5 crs.

The early period as background of modern Russia. Emphasis on internal and foreign developments which resulted in the Soviet state. 3 periods weekly for one and one-half semesters. *Professor Husek.*

HI 413 Contemporary Affairs 3 crs.

National and international problems, using magazines, newspapers, telecasts, and recent books. Political, economic, social, and scientific developments. *Professor Bates.*

HI 419 Intellectual History of Modern Europe 4.5 crs.

From the close of the Middle Ages to the present. 3 periods weekly for one and one-half semesters. *Associate Professor Rotstein.*

HI 421 History of Massachusetts 3 crs.

From the days of the Pilgrims and Puritans to the present. In the modern period emphasis is on social, economic, and constitutional history. *Professor Fiore.*

HI 425 Social and Intellectual History of the United States to 1914. 4.5 crs.

The economic, social, and cultural development to the eve of the First World War, with emphasis on the transformation from an agricultural to an industrial society. 3 periods weekly for one and one-half semesters. *Professor Fiore.*

HI 430 Europe in the Middle Ages 3 crs.

From the fall of Rome to the Renaissance. *Associate Professor Keay.*

HI 432 Modern European Imperialism 3 crs.

Africa and Asia considered as contrasting phases of European expansion in the nineteenth and twentieth centuries. *Assistant Professor Doiron.*

HI 433 Africa since 1800 3 crs.

The impact of Islamic and European cultures on the peoples of Africa; creation of colonial empires. *Assistant Professor Doiron.*

HI 436 The Renaissance and the Reformation 3 crs.

Western Europe from the decline of feudal institutions to the emergence of the modern state system, with emphasis on cultural and intellectual affairs. *Associate Professor Keay.*

HI 437 Modern France 3 crs.

From the Revolution of 1789 to the present. *Associate Professor Rotstein.*

HI 441 American Negro History 3 crs.

From the colonial period through the present. *Mrs. O'Connell.*

HI 452 Senior Seminar in History 3 crs.

Prq.: Admission is subject to the consent of the department chairman and the instructor.

Each senior will elect a seminar in United States, European, or Latin American history. The number of students in each one is limited. 2 periods weekly. *Professor Fiore and Staff.*

HI 455 Nationalism in Central and Southern Europe 2 crs.

The aspirations of subject peoples and present-day tensions; the nineteenth and twentieth centuries. 4 periods weekly for one quarter. *Professor Husek.*

HI 456 History of Brazil 2 crs.

4 periods weekly for one quarter. *Professor Herrick.*

HI 457 Historical Museum Management 2 crs.

4 periods weekly for one quarter. *Visiting Lecturer.*

HI 461 History of East Asia 4.5 crs.

Emphasis on China and Japan in the nineteenth century. 3 periods weekly for one and one-half semesters. *Mr. Yin.*

HI 481 United States Foreign Relations to 1900 3 crs.

From the American Revolution to 1900. *Professor Bates.*

HI 482 United States Foreign Relations since 1900 3 crs.

Professor Bates.

DEPARTMENT OF INSTRUCTIONAL MEDIA

Professor Henry Rosen, *Chairman*

Assistant Professor Thomas Lee

Instructor Robert Ward

The Instructional Media department offers students the opportunity to become adept at and proficient in the use of the latest theory, techniques, and technology in education. The department makes available extensive resources, references, and work areas for previewing, analysis, development, and presentation of materials.

A concentration in Instructional Media is now available. This concentration consists of 9 hours of study under the direction of the department chairman.

AV 310 Audiovisual Methods and Materials 2 crs.

Introduction to instructional media and technology. Instruction in and application of still pictures, slides, filmstrips, recordings, radio, television, three-dimensional materials, field trips, flannel boards, chalk boards, and specialized teaching machines. Sources of teaching aids and supplementary materials accompanies laboratory procedures. Three periods weekly. *Professor Rosen and Staff.*

AV 310-1 Audiovisual Methods and Materials for Special Education 3 crs.

Same as AV 310 with guided research applicable to all areas of Special Education. *Professor Rosen and Staff.*

AV 420 Advanced Audiovisual Techniques

Prq.: AV 310 or AV 310-1.

Directed study course. Development of a course of study in the student's field of concentration coordinated with instructional media and technology. Credit and hours to be arranged. *Professor Rosen.*

AV 424 Seminar in Instructional Media 3 crs.

Prq.: AV 420, AV 452, and AV 460.

Systematic review of literature and research, techniques, and technology in instructional media. Reports for group discussion and analysis. *Professor Rosen.*

AV 452 Science of Photography in Education 3 crs.

Prq.: AV 310 or AV 310-1 or consent of the instructor.

Instruction in the basic philosophy, educational planning, and the techniques of preparation of photographic instructional materials. Preparation of color and black and white slides, stills, filmstrips, transparencies for overhead projection. Emphasis upon photography and darkroom techniques. *Assistant Professor Lee, Mr. Ward.*

AV 460 Graphic Arts in Instructional Media 3 crs.

Prq.: AV 452 or consent of instructor.

Instruction in graphic arts pertaining to new technology in education. Mechanical and hand lettering and lay-out. Preparation of materials by color-lift, thermofax, and tecnifax techniques. Basics for photocopying including 2" x 2" slides. *Assistant Professor Lee.*

DEPARTMENT OF LIBRARY SCIENCE

Associate Professor Beatrice Bouchard, *Chairman*

Instructors: Olive Lee, Adeline Oakley.

The Department of Library Science offers library instruction to all students during their freshman year, to upperclassmen in elective courses, to students who wish to minor in Library Science. The requirements for Massachusetts School Librarian certification, effective May 1, 1963, are a bachelor's degree from a college approved by the Board of Education, including at least eighteen hours in Library Science education. Courses indicated by asterisks are required for certification. Students not wishing to be certified as school librarians may elect Library Science courses to upgrade personal research skills or teaching potential.

Freshmen are exposed to the Library for one quarter during the first or the second semester. One period a week is devoted to developing basic library skills, acquainting oneself with general reference literature, and meeting research problems. Required of all freshmen. 1 one-hour period weekly; no credit.

LI 310 Children's Literature* 3 crs.

Reading interests of children from pre-school years through the elementary grades with emphasis on the contribution that reading can make toward the process of growing up; criteria for evaluation and analysis of children's books; types of books available today, considered in terms of the needs, interests, and abilities of children. Topics covered are history of literature for children; illustrators; folk-tales; myths; modern fanciful tales; fiction; poetry; books in special fields, such as history, science, travel. *Associate Professor Bouchard, Mrs. Oakley.*

LI 320 Literature for Young Adults* 3 crs.

Survey of literature for the adolescent, designed for junior and senior high school

teachers and librarians, including a brief history of the development of this literature, evaluation of publishers, and psychology of the adolescent reader. *Mrs. Oakley.*

LI 370 Reference Materials and Their Use* 3 crs.

Outlines of appropriate procedures in various disciplines. A bibliographic search diary gives practical application of techniques using all the resources of the library. *Mrs. Oakley.*

LI 380 Seminar on the Book 3 crs.

The development of the written word from the earliest alphabet to today's computerized publishing, and the housing and dissemination of the book in relation to the world of learning. *Mrs. Oakley.*

LI 430 School Library Administration* 3 crs.

Principles and practices in school library administration and service; the role of the library in the school's educational program; pupil instruction in library use; the planning and equipping of the library; and other aspects of library organization. *Associate Professor Bouchard.*

LI 440 Cataloguing and Classification* 3 crs.

Emphasis is on the Dewey Decimal classification and Sears Subject headings. Some time is given to the general processing of books. *Associate Professor Bouchard.*

LI 451 Storytelling 3 crs.

Examination of the literary sources, experience in selection and presentation of stories, and techniques in cultivating appreciation of literature in children from kindergarten through grade 8. *Associate Professor Bouchard.*

DEPARTMENT OF MATHEMATICS

Associate Professor Joseph Chiccarelli, *Chairman*

Associate Professors: Murray Abramson, Robert Bent, Robert Lemos, Henry Mailloux

Assistant Professors: Walter Gleason, Michael Makokian, Richard Quindley, Ignatius Scalisi, Donald Simpson

Instructors: Frank Lambiase, Thomas Moore, Robert Sutherland

Since mathematics is both a cultural and technical field of study, the curriculum is planned with the following objectives: 1) to give the student an introduction to mathematics as an important area of human thought; 2) to give adequate preparation for students planning to teach mathematics on the secondary level; 3) to serve the needs of students in fields which rely on mathematics, e.g., experimental sciences, social sciences, and elementary education; 4) to give preparation to students for graduate study in mathematics and related fields.

Mathematics majors who are enrolled in the program leading to the degree of Bachelor of Arts, in addition to completing General Requirements, must satisfactorily complete the following courses: MA 101, 102, 201, 202, 301, 401 and six electives from MA 302, 303, 304, 308, 316, 402, 403, 406, 407, 408, 412, 415, 418.

The language requirement is satisfied by French, German, or Russian. A grade of C or above in MA 102 is required for continuation as a mathematics major.

A concentration in mathematics for students majoring in Elementary Education is comprised of three courses to be selected from MA 110, 322, 421, 422, 425.

MA 101, 102 Calculus with Analytic Geometry I-II 4 crs. for each semester.

Inequalities, functions and their graphs, the line and linear inequalities, limits and continuity, differentiation of algebraic functions and applications. The definite integral and applications, analytic geometry of the conic sections, the trigonometric and exponential functions, parametric equations and polar coordinates, calculus of vectors in a plane. Required of all freshman candidates for a degree in Mathematics, Physics, or Chemistry. Open to other qualified freshmen with consent of the Department Chairman. *Associate Professor Bent and Staff.*

MA 103, 104 Mathematical Analysis I-II 3 crs. for each semester.

Sets, algebraic functions and their graphs, topics from algebra, trigonometric functions and analytic trigonometry, logarithmic and exponential functions, analytic geometry of the line and conic sections, differentiation and integration of algebraic functions and their applications. Required of all freshman candidates for a degree in Biology or Earth Science. *Associate Professor Mailloux, Mr. Lambiasi.*

MA 105 College Mathematics I 3 crs.

Set theory, elementary logic, modulo systems, introduction to groups and fields with emphasis on number systems, finite geometry. Required of all freshman non-science majors. *Assistant Professor Simpson and Staff.*

MA 106 College Mathematics II 3 crs.

Prq.: MA 105.

Linear and quadratic equations, functions and their graphs, trigonometry, analytic geometry of the straight line and conic sections. Mathematics elective for non-science majors. *Mr. Sutherland and Staff.*

MA 107, 108 College Mathematics for Elementary Majors I-II

3 credits for each semester.

Theory of sets, relations and their properties, systems of numeration, axiomatic approach to the real number system through a study of the integers and rational numbers, elementary number theory, nonmetric and analytic geometry, groups, linear equations and inequalities, probability. *Associate Professor Mailloux and Staff.*

MA 110 Elementary Statistics 3 crs.

Variance, covariance, linear correlation, general regression lines, introduction to sampling theory; and the following distributions: normal, t, chi-square and F. Required of all freshmen who are candidates for a degree in Health and Physical Education. *Assistant Professor Gleason, Mr. Moore.*

MA 201 Calculus with Analytic Geometry III 4 crs.

Prq.: MA 102.

Methods of integration and applications, solid analytic geometry, calculus of vectors in space, elements of infinite series, partial differentiation, multiple integration. *Associate Professor Bent, Mr. Lambiase.*

MA 202 Linear Algebra I 4 crs.

Vectors and analytic geometry of space, vector spaces, systems of linear equations, determinants, applications to geometry and analysis. *Associate Professor Bent, Mr. Lambiase.*

MA 220 Introduction to Calculus 3 crs.

Prq.: MA 106.

Functions and limits, derivatives and antiderivatives, the definite integral, differentiation of algebraic and transcendental functions, applications. Mathematics elective for non-science majors. *Mr. Sutherland.*

MA 301 Abstract Algebra I 3 crs.

Introduction to the theory of rings, integral domains and fields through a study of integers, rational numbers, real numbers, complex numbers and polynomials; elementary group theory. *Assistant Professor Simpson, Mr. Moore.*

MA 302 Abstract Algebra II 3 crs.

Prq.: MA 301.

Group theory, linear groups, rings and ideals, extensions of rings and fields. *Mr. Moore.*

MA 303 Number Theory 3 crs.

Development of the number system, the Euclidean Algorithm and its consequences, theory of congruences, number-theoretic functions, Diophantine equations, quadratic residues. *Assistant Professor Makokian.*

MA 304 Higher Geometry 3 crs.

Axiomatic systems, finite geometries, introduction to synthetic and analytic projective geometry, affine geometry, non-Euclidean geometry. *Mr. Sutherland.*

MA 308 Linear Algebra II 3 crs.

Prq.: MA 202.

Linear transformations and matrices, bilinear and quadratic forms, polynomial rings, characteristic values and vectors of linear transformations, similarity of matrices, applications. *Associate Professor Lemos.*

MA 316 Differential Equations 3 crs.

Prq.: MA 201.

Ordinary differential equations of first and second order, linear differential equations with constant coefficients, the Laplace transformation, applications. *Assistant Professor Quindley.*

MA 322 College Algebra for Elementary Majors 3 crs.

Prq.: MA 108.

Elementary logic, the real and complex number systems, algebra of polynomials and algebraic fractions, exponents and radicals, inequalities, functions and their graphs, polynomial functions. *Associate Professor Abramson, Associate Professor Mailloux.*

MA 349 Foundations of Mathematics 3 crs.

Elements of set theory and logic, development of the basic number systems, Peano Postulates, development of the Natural Numbers, the Integers and Rational Numbers, Real Numbers, and Cauchy Sequences. *Assistant Professor Makokian.*

MA 401 Advanced Calculus I 3 crs.

Prq.: MA 201.

Fundamental theorems on limits and continuity, properties of derivatives, functions of several variables, partial derivatives, multiple integrals. *Assistant Professor Quindley.*

MA 402 Advanced Calculus II 2 crs.

Prq.: MA 401.

Sequences, infinite series, power series and expansions of functions, vector calculus. Four periods weekly for one quarter. *Associate Professor Bent.*

MA 403 Probability Theory 3 crs.

Prq.: MA 201.

Permutations and combinations, calculus of probabilities, discrete and continuous random variables, expectation, elementary probability distributions, moment-generating functions, sample spaces. *Assistant Professor Makokian.*

MA 406 Theory of Sets and Elementary Logic 2 crs.

Truth tables, rules of inference, method of proof, the algebra of sets and graphs of functions, cardinal numbers. Four periods weekly for one quarter. *Associate Professor Abramson.*

MA 407 Topology 3 crs.

Prq.: MA 201.

The elements of point set topology, closed sets and open sets in metric spaces, continuous mappings, connection, separation theorems and compactness. *Mr. Sutherland.*

MA 408 History of Mathematics 3 crs.

The development of elementary mathematics from ancient to modern times. *Associate Professor Lemos.*

MA 412 Mathematical Statistics 3 crs.

Prq.: MA 403.

Fundamental statistical methods, tests of significance and estimation based on large or small samples, simple correlation, linear regression, statistical inference, sequential analysis. *Assistant Professor Gleason.*

MA 415 Numerical Analysis 3 crs.

Prq.: MA 201.

Solution of algebraic and transcendental equations: general iteration method, Newton-Raphson method. Approximation of functions and curve fitting: Lagrange interpolation formula, Newton's forward difference method, method of least squares, orthogonality. Numerical integration, Euler-Cauchy technique. *Assistant Professor Scalisi.*

MA 418 Complex Function Theory 3 crs.

Prq.: MA 401.

Analytic functions of a complex variable, differentiation and integration in the complex plane, Cauchy's theorems, infinite series, Laurent expansions, theory of residues. *Mr. Lambiase.*

MA 421 Analytic Geometry for Elementary Majors 3 crs.

Prq.: MA 108.

Trigonometric functions and analytic trigonometry, analytic geometry of the straight line and conic sections. *Assistant Professor Scalisi.*

MA 422 Probability and Statistics for Elementary Majors 3 crs.

Prq.: MA 108.

Permutations and combinations, finite sample spaces, random variables, binomial distributions, statistical applications. *Associate Professor Lemos.*

MA 425 Calculus for Elementary Majors 3 crs.

Prq.: MA 108.

Graphs and curves, differentiation and integration of algebraic and transcendental functions, applications. *Associate Professor Bent, Assistant Professor Gleason.*

DEPARTMENT OF MODERN FOREIGN LANGUAGES

Associate Professor Robert Arruda, *Chairman*

Associate Professor Wayne Judah

Assistant Professors: Robert Briggs, Anthony Cotugno, Dale Dawley, Barbara George, Joseph Giannini, Lenore Padula, Christiana Reordan, Mary Shapiro

Instructor Armand Desautels

The Modern Foreign Language Department offers to all A.B. students an opportunity to gain a practical working knowledge of one or more of six modern foreign languages by requiring them to take four semesters, or their equivalent, following their initial placement in the freshman year. Initial placement in, and successful completion of, the 181–182 level of foreign language study satisfies the graduation requirement in this area. Students may choose any of the six languages offered by the Department unless otherwise restricted by the requirements of their academic major. B.S. students are free to elect any language course as an elective or minor concentration provided they meet the basic requirements of the course in question.

The Department currently offers majors in French, German, and Spanish, with academic minors possible in these same languages or in Italian, Russian, and Portuguese. The departmental majors seek to develop a fluent command of the four language skills, and a broad acquaintance with the salient characteristics of the literature and civilization of the language being studied.

A grade of C or above in the 181–182 course sequence is required for continuation as a language major. Normally, 30 semester hours are required for a foreign language major, following successful completion of the 181–182 course. Foreign language majors are required to take all courses in numerical sequence, unless otherwise arranged with the Department Chairman. Those who intend to enter secondary level teaching are required to take ED 324 (Teaching Language in the Secondary School). Language minors are required to take 18 semester hours following their initial language placement. The choice and sequence of such courses may be determined by consultation with the Chairman of the Department. For all prerequisites, equivalent course credit or preparation will be accepted.

FRENCH

LF 101, 102 Elementary French 3 crs. for each semester.

An aural-oral approach to the grammar of the French language. Emphasis will be on correct pronunciation and essential grammatical points to ensure a mastery of the basic skills of the language. Four periods weekly. *Assistant Professor Dawley and Staff.*

LF 151, 152 Intermediate French 3 crs. for each semester.

Prq.: LF 102.

A review of French grammar with stress on essential grammatical points and oral proficiency. Readings in French civilization and culture. *Mr. Desautels and Staff.*

LF 181, 182 Advanced French 3 crs. for each semester.

Prq.: LF 152.

A concentration on more advanced aspects of the spoken and written French lan-

guage. Conversational fluency through individual classroom participation is stressed. *Assistant Professor Giannini and Staff.*

LF 201 French Literature of the Middle Ages 3 crs.

Prq.: LF 182.

Readings in modern French translation reflecting main currents in medieval thought. *Associate Professor Judah.*

LF 252 16th Century French Literature 3 crs.

Prq.: LF 201.

The development of ideas, particularly humanism, in the works of Rabelais, the Pléiade, and Montaigne. *Associate Professor Judah.*

LF 281 French Conversation and Civilization 3 crs.

Prq.: LF 182.

Improvement of oral expression and pronunciation. Assigned topics on aspects of French civilization to build vocabulary and to apply structures learned. *Mr. Desautels.*

LF 301 17th Century French Literature 3 crs.

Prq.: LF 252.

The principal historical events and representative authors of France of the 17th Century will be studied with the object of understanding Classicism as a literary movement. *Associate Professor Arruda.*

LF 352 18th Century French Literature 3 crs.

Prq.: LF 301 or consent of the instructor.

The literary contributions of the Enlightenment and Encyclopedists to the French Revolution and pre-Romanticism. *Associate Professor Arruda.*

LF 381 French Linguistics and Phonetics 3 crs.

Prq.: LF 182.

A linguistic approach to the sounds of the French language with emphasis on a mastery of the elements of correct standard pronunciation. *Assistant Professor Dawley.*

LF 401 19th Century French Literature 4.5 crs.

Prq.: LF 352.

Through representative works, the entire 19th Century will be surveyed with special emphasis on principal literary movements: Romanticism, Realism, and Symbolism. Three periods weekly for three quarters. *Associate Professor Judah.*

LF 451 20th Century French Literature 4.5 crs.

Prq.: LF 352.

Literary movements will be discussed and typical works of well-known authors will be read for class work and individual reports. Bourget, France, Gide, Proust, Claudel, Romans, Sartre, Camus. Three periods weekly for three quarters. *Assistant Professor Giannini.*

LF 481 Advanced French Composition and Grammar 3 crs.

Prq.: LF 182.

A thorough study of French grammar to develop a written command of the French language. Six periods weekly during either 1st or 2nd quarter. *Assistant Professor Dawley.*

GERMAN**LG 101, 102 Elementary German 3 crs. for each semester.**

An audio-lingual approach to the study of the German language. Emphasis on correct pronunciation and basic grammar. Four periods weekly. *Assistant Professor Reordan and Staff.*

LG 151, 152 Intermediate German 3 crs. for each semester.

A systematic review of basic German grammar. Graded reading selections and an introduction to some aspects of German culture. *Assistant Professor Reordan and Staff.*

LG 181, 182 Advanced German 3 crs. for each semester.

Introduction to a more advanced level of the literature. Representative German authors will be read and discussed. *Assistant Professor George and Staff.*

LG 191, 192 Scientific German 3 crs. for each semester.

A systematic review of German grammar. Emphasis on vocabulary building for the reading of scientific material. Open to science majors as a substitution for LG 151, 152. *Assistant Professor George.*

LG 201, 202 Survey of German Literature 3 crs. for each semester.

German literature from its earliest beginnings to the present day. Representative works of the principal literary periods will be read and discussed. *Assistant Professor Briggs.*

LG 282 German Conversation and Civilization 3 crs.

Prq.: LG 182.

Designed to develop further the student's command of spoken German. Discussion topics will center upon aspects of German civilization and culture. *Assistant Professor George.*

LG 301, 302 Modern German Literature 3 crs. for each semester.

Prq.: LG 202.

Principal works and authors of contemporary German literature. *Assistant Professor Briggs.*

LG 351 German Romanticism 3 crs.

Prq.: LG 202.

Pertinent authors and their representative works. Romanticism as a literary movement. *Instructor to be announced.*

LG 382 Medieval German Literature 3 crs.

Prq.: LG 202.

The beginnings of German literature through principal works of the period. *Instructor to be announced.*

LG 401 The Age of Goethe and Schiller 4.5 crs.

Prq.: LG 202.

The Storm and Stress Period and Classical Period of German literature, with a focus upon Goethe and Schiller as the leading representatives of these movements. Three periods weekly for three quarters. Not offered in 1970-1971.

LG 451 German Drama, Prose and Poetry of the 19th Century 4.5 crs.

Prq.: LG 202.

Representative writers of the century will be read and discussed, with particular emphasis upon Grillparzer, Kleist, Keller, and Storm. Three periods weekly for three quarters. Not offered in 1970-1971.

ITALIAN**LT 101, 102 Elementary Italian 3 crs. for each semester.**

An aural-oral approach to the grammar of the Italian language. Emphasis is on the mastery of correct pronunciation and of fundamental grammatical points to ensure a basic oral, reading and written command of the language. Four periods weekly. *Assistant Professor Padula.*

LT 151, 152 Intermediate Italian 3 crs. for each semester.

Prq.: LT 102.

A continuation of Elementary Italian, with stress on essential grammatical features, oral work, and reading and writing development in the language. *Assistant Professor Padula.*

LT 181, 182 Advanced Italian 3 crs. for each semester.

Prq.: LT 152.

A review of basic Italian grammar and presentation of more advanced structural elements. Stress on improvement of compositional and aural-oral skills. Varied cultural reading selections. *Assistant Professor Padula.*

PORTUGUESE**LP 101, 102 Elementary Portuguese 3 crs. for each semester.**

An introduction to the basic skills of reading and writing and the development of aural comprehension and correct oral pronunciation. Four periods weekly. *Associate Professor Arruda.*

LP 151, 152 Intermediate Portuguese 3 crs. for each semester.

Prq.: LP 102.

A review of basic grammar and pronunciation and a more advanced study of these two aspects of the language. Reading, writing and oral proficiency will be stressed. *Associate Professor Arruda.*

LP 181, 182 Advanced Portuguese 3 crs. for each semester.

Prq.: LP 152.

Stress on improvement of compositional and aural-oral skills. Literary texts from Brazilian and Portuguese literatures. History of Brazil and Portugal. *Associate Professor Arruda.*

RUSSIAN**LR 101, 102 Elementary Russian 3 crs. for each semester.**

Simultaneous development of the four fundamental language skills. Classwork supplemented by laboratory drills. Four periods weekly. *Assistant Professor Reordan.*

LR 151, 152 Intermediate Russian. 3 crs. for each semester.

Consolidation of elementary Russian through review of basic elements, plus written and oral self-expression based on detailed readings of selected texts. *Assistant Professor Reordan.*

LR 181, 182 Advanced Russian 3 crs. for each semester.

Prq.: LR 152.

Progressive development of the student's language proficiency through reading of scientific and literary texts, oral practice and written compositions. *Assistant Professor Reordan.*

SPANISH**LS 101, 102 Elementary Spanish 3 crs. for each semester.**

An audio-lingual approach to the essentials of Spanish pronunciation and grammar. Reading and writing proficiency will be stressed. Four periods weekly. *Assistant Professor Cotugno and Staff.*

LS 151, 152 Intermediate Spanish 3 crs. for each semester.

Prq.: LS 102.

A review of correct pronunciation to accompany the development of an oral-aural command of the language. Aspects of Hispanic culture will be introduced. *Assistant Professor Padula and Staff.*

LS 181, 182 Advanced Spanish 3 crs. for each semester.

Prq.: LS 152.

A more detailed study of Spanish grammar. Vocabulary development, correct pronunciation, and improved audio-oral skills. Cultural readings from Hispanic world. *Assistant Professor Cotugno and Staff.*

LS 201, 202 Survey of Spanish Literature 3 crs. for each semester.

Prq.: LS 182.

Major literary movements, works and authors of peninsular Spanish literature from earliest times to the present. *Assistant Professor Cotugno.*

LS 251, 252 Survey of Spanish-American Literature 3 crs. for each semester.

Prq.: LS 182.

A representative study of the literature of the Colonial period, the Independence period, the 19th Century, Modernism and the Contemporary period. *Assistant Professor Cotugno.*

LS 281 Spanish Conversation and Linguistics-Phonetics 3 crs.

Prq.: LS 182.

Improvement of oral proficiency by a systematic study of the sounds of correct pronunciation. *Assistant Professor Cotugno.*

LS 282 Spanish Composition and Civilization 3 crs.

Prq.: LS 182.

An introduction to the history, geography, social institutions, and culture of Spain. Assigned compositions. *Assistant Professor Cotugno.*

LS 301 The Golden Age of Spanish Literature 3 crs.

Prq.: LS 202.

A study of the poetry, prose and theatre from the second half of the 16th Century to the Baroque Period. Emphasis will be on the mystics, Góngora, Lope de Vega, Calderón, and Quevedo. *Instructor to be announced.*

LS 351 Cervantes 3 crs.

Prq.: LS 202.

A study of the man and his works, with special emphasis on *Don Quixote*. *Instructor to be announced.*

LS 382 The Middle Ages 3 crs.

Prq.: LS 202.

A study of the evolution of Spanish literature through the first half of the 16th Century. Romances, Poema des Cid, La Celestina, Lazarillo de Tormes, El Libro de Buen Amor. *Instructor to be announced.*

LS 401 19th Century Spanish Literature 4.5 crs.

Prq.: LS 202.

The Romantic and Realist Movements. Representative works of the novel, poetry and drama. Caballero, Alarcón, Galdós, Valdés, Clarín, Bazán, Ibáñez, Duque de Rivas, Gutiérrez, Espronceda, Larra. Three periods weekly for three quarters. Not offered 1970-1971.

LS 451 20th Century Spanish Literature 4.5 crs.

Prq.: LS 202.

The Spanish novel, essay, poetry and drama from the Generation of '98 to the present. Unamuno, Baroja, Azorín, Machado, Jiménez, Lorca, Casona, Cela. Three periods weekly for three quarters. Not offered 1970-1971.

DEPARTMENT OF MUSIC

79

Professor Kenneth Falkner, *Chairman*

Assistant Professors: Dorothy Ferry, Vincent Gannon, Marjorie Hayward

Instructors: M. Beth Poulo, Jacob Liberles

The Music Department offers a minor and a concentration in music for the liberal arts and elementary education majors, courses for the humanities elective requirement, private instruction in piano and voice, and performing organizations for the student who wishes to take a more active part in music.

Liberal Arts majors who elect music as a minor are required to complete 18 semester hours in music which include 6 in applied voice or piano, MU 171, 172, 160 or 360, and one course from MU 363, 364, 365 or 366. Elementary Education majors who elect music as a concentration are required to complete the following 12 semester hours MU 140, 240, 251, and 255. Those who wish to minor in music should add MU 330 and 360 to the concentration requirements.

Students must notify and receive approval from the department chairman for acceptance into the music program. A grade of C or better is required in all music course work as well as membership in one performing organization.

MU 111 College Band 1 cr.

Prq.: Consent of the instructor.

Open to all interested and qualified students who wish to continue their experience in band music. Emphasis placed on contemporary works and music especially written for band. Concerts scheduled on campus and exchange concerts with other college bands. Three periods weekly. *Assistant Professor Gannon.*

MU 113 Stage Band 1 cr.

Prq.: Consent of the instructor.

A performing group limited to twenty students in a laboratory experience which stresses basic musicianship, analysis of form and style, ensemble playing, and improvisation. One three-hour period weekly. *Assistant Professor Gannon.*

MU 115 Instrumental Ensemble 1 cr.

Prq.: Consent of the instructor.

A mixed group of instruments which performs music originally written for that particular combination of instruments. Ensembles formed as the occasion demands. One three-hour period weekly. *Assistant Professor Gannon and Staff.*

MU 117 Women's Glee Club 1 cr.

Open to all female students who like to sing. Performances are given during the

year which include traditional and folk songs, arrangements from musical comedies and music that is currently popular. Three periods weekly. *Mr. Liberles.*

MU 118 Chorale 1 cr.

Prq.: Consent of the instructor.

A selected group of mixed voices which performs works representative of many periods of music and presents concerts throughout the academic year, at times with other college groups on and off campus. Three periods weekly. *Mr. Liberles.*

MU 119 Vocal Ensemble 1 cr.

Prq.: Consent of the instructor.

A mixed group of voices which is organized to perform a particular type of music. Ensemble formed as the occasion demands. Three periods weekly. *Mr. Liberles.*

MU 131 Applied Voice Credits arranged.

Prq.: Consent of the instructor.

Private lessons in voice for the beginning student and those with a limited background in singing. Basic concepts in posture, breathing, diction and vocalises stressed. Solo material selected from vocal literature in English with an introduction to literature in a foreign language. One or two half-hour periods weekly. *Instructor to be announced.*

MU 140 Class Piano I 3 crs.

For beginning piano students who desire a fundamental approach to the keyboard. Required of elementary education majors who have elected music as a concentration or a minor. Includes correct use of the hands at the keyboard, playing of simple scales and chords, arpeggios and simple melodies; scale construction and use of I, IV and V chords. *Mrs. Poulo.*

MU 141 Applied Piano Credits arranged.

Private instruction for the beginning piano student and those with a limited background in piano. Material selected according to the ability of the students. May be repeated for credit. One or two half-hour periods weekly. *Mrs. Poulo.*

MU 160 Music Literature I 3 crs.

A non-technical humanities elective which explores music from the Baroque through Contemporary periods with emphasis on how to listen to music intelligently. Selected works by the masters include symphonies, concertos, oratorios, operas and smaller works which are used for study, listening and discussion. *Assistant Professor Hayward.*

MU 171, 172 Harmony I-II 3 crs. for each semester.

A beginning technical course in the study of 18th and 19th century theory of music for students who wish a foundation for further development of their musical awareness. Includes rudimentary fundamentals of music theory, harmonic structure of chords of the sixth through secondary dominants, and simple modulations. MU 171 is prerequisite to MU 172. Five periods weekly. *Professor Falkner.*

MU 240 Class Piano II 3 crs.

Prq.: MU 140 or consent of the instructor.

A continuation of MU 140 with advanced keyboard work and more difficult melodies and rhythmic patterns. Use of II, III and VI chords, simple modulations, and keyboard harmony. *Mrs. Poulo.*

MU 250 Essentials of Music 3 crs.

Required of all Elementary and Physical Education majors but not those who have elected music as a concentration or minor. A non-technical approach to the use of music in the elementary school which serves to enhance the student's knowledge and ability to use music in the classroom. *Assistant Professor Ferry.*

MU 251 Choral Techniques 3 crs.

Prq.: Consent of the instructor.

A required course for Elementary Education majors who have elected music as a concentration or minor and open to other students with permission of instructor. Investigation and study of voice problems, unison and part singing, children's literature, solfeggio, melodic rhythmic dictation. *Assistant Professor Ferry.*

MU 255 Music Materials for Elementary Teachers 3 crs.

Prq.: Consent of the instructor.

Includes singing, use of instruments, listening, reading music, and rhythmic activity. *Assistant Professor Ferry.*

MU 330 Voice Class 3 crs.

Prq.: MU 251 or consent of the instructor.

Correct posture, breathing and control are studied as well as ways of correcting individual voice problems, repertoire, solfeggio, and advanced dictation. *Assistant Professor Hayward.*

MU 331 Applied Voice 3 crs.

Private lessons in voice for those who have satisfied the requirements of MU 131. A continuation of vocalises, breath and tone control, solo material selected from the literature of German, French, and Italian composers as well as contemporary works in English. *Instructor to be announced.*

MU 341 Applied Piano Credits arranged.

Prq.: MU 141 and consent of the instructor.

For the advanced student of piano who wishes to improve his ability at the keyboard. Material selected according to the ability of the student. One or two half-hour periods weekly. *Mrs. Poulo.*

MU 355 Creative Activities in Elementary School Music 3 crs.

Prq.: MU 240, MU 255, or consent of the instructor.

Practical experience offered in free and directed rhythmic responses, use of melody, percussion and chording instruments, use of the piano, and singing activities. *Assistant Professor Ferry.*

MU 360 Music Literature II 3 crs.

Prq.: MU 251 or consent of the instructor.

An advanced course in the development of music with a study of style, form and structure through analysis, listening, and discussion. *Professor Falkner.*

MU 363 Music of the Renaissance and Baroque Periods 3 crs.

Prq.: MU 160 or consent of the instructor.

A study of vocal and instrumental, sacred and secular music through readings, lectures and discussion of selected compositions representative of these two periods. Not offered in 1970-1971.

MU 364 Music of the Classical and Romantic Periods 3 crs.

Prq.: MU 160 or consent of the instructor.

A study of vocal and instrumental music of these two periods through readings, lecture, listening and discussion. Not offered in 1970-1971.

MU 365 Music of the Contemporary Period 3 crs.

Prq.: MU 160 or consent of the instructor.

A study of present day music and its relationship to the past; includes experimental and electronic developments; readings, lecture, listening and discussion. *Professor Falkner.*

MU 366 Music of the Opera 3 crs.

Prq.: MU 160 or consent of the instructor.

A listener's approach to opera with representative examples from Peri to present day composers. Works by composers from Germany, France and Italy will be studied along with contributions from England and America. *Professor Falkner.*

MU 370 Music Skills 3 crs.

For the elementary teacher or undergraduate student who wishes a knowledge of the basic fundamentals of music to use as a basis for further study. Includes scales, chords, singing, playing simple instruments, and rudimentary harmonic progressions. *Professor Falkner.*

DEPARTMENT OF PHILOSOPHY

Chairman to be announced.

Associate Professor Joseph Corkery

Assistant Professor Achille Joyal

PL 210 Ethics 3 crs.

A study of human conduct; its psychological roots, its freedom, its goal and the means to that goal, including conscience, law, virtue, and love or friendship. Comparative study of representative ethical theories. *Assistant Professor Joyal.*

PL 310 Logic 3 crs.

An introduction to formal logic and analysis; study of propositions and syllogisms; introduction to symbolic logic; selected problems in the philosophy of logic and language. *Instructor to be announced.*

PL 380 Introduction to General Philosophy 3 crs.

An introduction to logical and critical reflection upon the opinions of philosophers concerning selected problems in philosophy, such as the existence of God, the nature of man, and ethics. *Staff.*

PL 381 History of Ancient Philosophy 3 crs.

A critical study of Greek philosophers from Thales through Aristotle, concentrating on Plato and Aristotle. *Assistant Professor Joyal.*

PL 382 History of Modern Philosophy 3 crs.

Prq.: PL 381.

A critical and selective study of modern philosophers; an introductory study of St. Thomas Aquinas; study of philosophers from Descartes through Kant. *Instructor to be announced.*

PL 410 Existentialism 3 crs.

Prq.: PL 380.

A critical study of the concepts of human existence, anxiety, freedom, decision; introduction to phenomenology; readings from Kierkegaard, Heidegger, Jaspers, Sartre, Camus. Not offered in 1970-1971.

DEPARTMENT OF PHYSICS

Professor Richard Calusdian, *Chairman*

Professors: Felix Palubinskas, George Weygand

Associate Professor Raymond Blanchard

The Physics Department offers a program leading to the degree of Bachelor of Arts in Physics. This program prepares the student for graduate school, for a career in industry or government, or for the teaching of physics in high school. If a student minors in education he will meet the Massachusetts State Certification requirements for teaching physics. One three-credit mathematics course as an elective will allow the student to meet the Massachusetts State Certification requirements for teaching Mathematics.

The following physics courses are required for a major in Physics: PH 243, 244, 385, 387, 388, 389, 403 or their equivalents.

The following courses outside the department are also required for a major in Physics: CH 141, 142; MA 101, 102, 103, 316 or their equivalents.

A student may minor in physics by successfully completing 18 semester hours credit of physics acceptable for the major.

PH 181 Elements of Physics I 3 crs.

Principles of mechanics, heat and sound. Two lecture periods and one two-hour laboratory period weekly. *Professor Weygand.*

PH 182 Elements of Physics II 3 crs.

Prq.: PH 181.

Principles of electricity, magnetism, optics and modern physics. Two lecture periods and one two-hour laboratory weekly. *Professor Weygand.*

PH 200 Survey of Physics 3 crs.

Elements of mechanics, heat, electricity, magnetism, optics and modern physics. Two lecture periods and one two-hour laboratory weekly. *Professor Weygand.*

PH 243 General Physics I 4 crs.

Prq.: MA 102.

Calculus based study of mechanics and heat. Three lecture periods and one three-hour laboratory weekly. *Associate Professor Blanchard.*

PH 244 General Physics II 4 crs.

Prq.: PH 243.

Calculus based study of electricity, magnetism and light. Three lecture periods and one three-hour laboratory weekly. *Associate Professor Blanchard.*

PH 371 Biophysics, Macroscopic Aspects 3 or 4 crs.

Prq.: Consent of the instructor.

The structure, function, and control of the skeletal, muscular, nervous, blood-vascular and other body systems of the human being on the macroscopic or large-system level. Three lecture periods, one three-hour laboratory period weekly. This course may be taken without laboratory work. *Professor Palubinskas.*

PH 372 Biophysics, Microscopic Aspects 3 crs.

Prq.: Consent of the instructor.

The structure, function, and control of the human body on the microscopic or molecular level. May be taken independently of PH 371. *Professor Palubinskas.*

PH 381 Thermal Physics 3 crs.

Prq.: PH 243, PH 244.

Thermodynamics; kinetic theory; and statistical mechanics. *Professor Palubinskas.*

PH 385 Optics 4 crs.

Prq.: PH 244.

Study of geometrical and physical optics. Three lecture periods and one three-hour laboratory period weekly. *Professor Palubinskas.*

PH 386 Nucleonics 3 crs.

Prq.: PH 244.

Nuclear instrumentation, nuclear reactors, radiation shielding, and application of nuclear technology to specific areas of the physical sciences. Three lecture periods and two three-hour laboratory periods weekly for one quarter. *Professor Weygand.*

PH 387 Modern Physics 3 crs.

Prq.: PH 243, PH 244.

Theory of relativity; atomic structure; quantum theory; nuclear physics and elementary particles. *Professor Calusdian.*

PH 389 Mechanics 3 crs.

Prq.: PH 243.

Vector treatment of forces, torques; dynamics of particles and rigid bodies; work and energy; momentum; small oscillation theory; Lagrangian and Hamiltonian formulation of dynamics. *Associate Professor Blanchard.*

PH 390 Research Problems in Physics Credits arranged.

Special projects for advanced students desiring individual instruction in the methods of physics research. Hours arranged. *Professor Calusdian and Staff.*

PH 391 Solid State Physics 3 crs.

Prq.: PH 387.

Crystal structure; electric, magnetic and thermal properties of matter; transport properties; band theory; super conductivity. *Professor Calusdian.*

PH 392 Electronics 4 crs.

Prq.: PH 244.

Study of electron tubes, semiconductors, and electronic circuits. Three lecture periods and one three-hour laboratory period weekly. *Professor Palubinskas.*

PH 395 History of Science 3 crs.

The development of scientific thought and scientific method from the Ionian Greeks to the contemporary era. *Professor Weygand.*

PH 398 Directed Study in Theoretical Physics Credits arranged.

The student may choose from among the following topics: theory of relativity; quantum theory; electromagnetic theory; statistical mechanics; classical mechanics and mathematical physics. Hours arranged. *Professor Calusdian and Staff.*

PH 399 Directed Study in Experimental Physics Credits arranged.

Introduction to advanced experimental techniques of physics. *Professor Calusdian and Staff.*

PH 402 Quantum Mechanics 3 crs.

Prq.: PH 403.

Wave nature of matter; the schrodinger equation; application of the schrodinger equation to the electron, the hydrogen atom, multi-electron atoms and radiation. *Professor Calusdian.*

PH 403 Mathematical Physics 3 crs.

Prq.: PH 243, PH 244, MA 103.

Vector analysis; matrices; linear differential equations; Sturm-Liouville theory; Fourier series; orthogonal functions; Laplace transform. *Professor Calusdian.*

PH 405 Nuclear Physics 3 crs.

Prq.: PH 387.

Nuclear forces, nuclear models, nuclear reactions and radioactivity, and elementary particles. *Instructor to be announced.*

DEPARTMENT OF POLITICAL SCIENCE

Professor Jordan Fiore, *Acting Chairman*

Assistant Professor Guy Clifford

Instructor Richard Yin

PO 271 Introduction to Political Science 3 crs.

Development of statecraft from ancient times to the present. *Assistant Professor Clifford.*

PO 272 American Government: the Federal System 3 crs.

The constitutional authority, organization, activities, and political processes of the national system. *Assistant Professor Clifford.*

PO 273 U.S. and Massachusetts Constitutions 1 cr.

Structure of government and rights and responsibilities according to Federal and Commonwealth constitutions. *Assistant Professor Clifford.*

PO 371 Comparative Government 3 crs.

Political behavior and governmental systems in Great Britain, France, and the Soviet Union. *Mr. Yin.*

PO 377 American Government: State and Local Government 3 crs.

Government and politics with emphasis on Massachusetts affairs. *Assistant Professor Clifford.*

PO 471 International Relations 4.5 crs.

The patterns of inter-state relations and the factors motivating the behavior of nations. 3 periods weekly for one and one-half semesters. *Mr. Yin.*

DEPARTMENT OF PSYCHOLOGY

Professor James Lester, *Chairman*

Professor Iva Lutz

Associate Professors: Herbert Greenwald, Elizabeth Hollis

Assistant Professors: Louis Schippers, James Scroggs

Required for a major in Psychology: 30 semester hours in Psychology, to include PY 200, 229, 230, and 231.

Other required courses: MA 110; BI 101, 102.

PY 200 General Psychology 3 crs.

Basic psychological processes such as perceiving, learning, thinking, emotion, and motivation, as well as more complex areas such as personality, adjustment, and social influences on behavior; major conclusions and basic methods of study in the field. *Professor Lester and Staff.*

PY 222 Psychology of Learning 3 crs.

Prq.: PY 200.

An examination of the theoretical and research aspects of the learning process. Theories of learning will be examined in relation to experimental design and the learning situation. *Assistant Professor Schippers.*

PY 224 Child Growth and Development 3 crs.

Prq.: PY 200.

Growth and development of the child from birth to pre-adolescence. Biological, psychological, and social factors as well as moral forces which influence child behavior. *Professor Lutz, Associate Professor Hollis.*

PY 226 Adolescent Psychology 3 crs.

Prq.: PY 200.

The major theories related to pre-adolescent and adolescent development. Physical, mental, moral, emotional, personality, and social aspects will be considered. *Assistant Professor Schippers.*

PY 228 Psychology of Mental Retardation 3 crs.

Prq.: PY 200.

Origins (genetic; organic; sensory, maternal, and cultural deprivation), manifestations, diagnostic aids, therapeutic and remedial techniques. *Assistant Professor Scroggs.*

PY 229 Abnormal Psychology 3 crs.

Prq.: PY 200.

A systematic study of behavior pathology. Symptom patterns, etiology, prognosis, and prevention. Understanding and care of mental illness. *Assistant Professor Scroggs and Staff.*

PY 230 Social Psychology 3 crs.

Prq.: PY 200.

The individual in social situations: attitude formation and change, culture and society, language and communication, leadership and group dynamics, personality characteristics and interpersonal relationships, small group behavior. *Associate Professor Greenwald and Staff.*

PY 231 Psychology of Personality 3 crs.

Prq.: PY 200.

Basic concepts in the field of personality, organized around such topics as motivation, personality structure and dynamics, personality development, assessment, and therapy. Problems and styles of adjustment will be considered. *Assistant Professor Scroggs and Staff.*

PY 302 Psychological Theory 3 crs.

Prq.: PY 200.

Fundamental assumptions underlying the psychological enterprise, and issues which are the subjects of continuing debate in the field—e.g., causality, determinism, methodological approaches, the control of behavior, conceptions of the nature of man. *Assistant Professor Scroggs.*

PY 304 Attitude and Personality Measurement 3 crs.

Prq.: PY 231, or PY 302, and MA 110.

Principles of construction of attitude scales and personality assessment techniques, including both projective and inventory-type techniques. Issues and controversies in psychological measurement. *Associate Professor Greenwald.*

PY 308 Experimental Social Psychology 3 crs.

Prq.: PY 230 and MA 110.

Recent research including developments in methodology, theory, and research findings. Situational and individual differences approaches useful in testing theories and hypotheses and in resolving conflicting findings of previous research. Research project required of the student. *Associate Professor Greenwald.*

PY 310 Seminar: Clinical Psychology 3 crs.

Prq.: PY 200 and PY 229.

Survey of diagnostic and treatment procedures and resources in clinical work with children and adults; professional skills and responsibilities of the clinical psychologist. *Professor Lester.*

PY 312 Seminar: Attitude Change Research 3 crs.

Prq.: PY 200 and PY 230.

Empirical research in persuasion; communicator credibility, opinion difference, commitment, one-sided (pro) and two-sided (pro and con) arguments, coercion, threat, emotional and rational arguments. Theories of attitude change, including dissonance theory, balance theory, congruity theory, and assimilation and contrast theory. *Associate Professor Greenwald.*

PY 322 Seminar: Applied Social Psychology 3 crs.

Effective communication and better understanding of oneself; listening, persuasion, conflict resolution, goals, expectations, and self-confidence. Contemporary problems such as dissent, minority problems. Guest speaker when possible. *Associate Professor Greenwald.*

PY 326 Seminar: Research Methods in the Behavioral Sciences 3 crs.

Prq.: PY 200 and MA 110.

The strategies of scientific research (hypothesis formation, experimental design, statistical analysis, data interpretation) and the tactics of obtaining reliable information and minimizing artifact (survey methods, various kinds of interviews, individual difference measures, controlled laboratory conditions). Offered only to majors in Psychology or another Behavioral Science. *Associate Professor Greenwald.*

PY 400 Research Practicum 3 crs.

Prq.: PY 326.

Individual or group research project. Offered only to majors in Psychology. *Professor Lester and Staff.*

PY 402 Directed Studies (or Honor Thesis) 3 crs.

Supervised individual project (reading, discussion, and report) for students who have completed the major portion of their degree requirements. Offered only to majors in Psychology. *Professor Lester and Staff.*

DEPARTMENT OF SECONDARY EDUCATION

Professor Stanley Clement, *Acting Chairman*

Professor Robert MacCurdy

Associate Professor Paul Kelley

Instructor John Jones

The Department of Secondary Education strives to provide students with the professional competencies necessary to become effective secondary teachers, including a knowledge of the principles upon which American Secondary Schools are founded and an ability to use appropriate teaching procedures, materials and evaluation techniques.

Students preparing to teach in secondary schools pursue a program leading to the degree of Bachelor of Arts with a minor concentration in Education. This minor enables the student to receive a Secondary Teaching Certificate immediately upon graduation. Each student must complete a minimum of 18 semester hours of credit in professional education courses, 6 of which will be earned in student teaching in the senior year. The following courses are required: ED 310, 312-324 (the appropriate course), 420, 480, and 490.

Through the Teacher Preparation Office, the Department of Secondary Education works closely with all college departments providing secondary majors and with area school systems that participate in the Teacher Preparation program.

ED 310 Principles of Secondary Education 3 crs.

A study of the secondary schools in a democratic society with particular stress on the following patterns: history, philosophy, objectives, curriculum, structures, articulation, the learning process, methods, materials, individual differences, discipline, management and evaluation. Students become involved in helpful learning experiences in the educational community and learn from personal contact how secondary schools are attempting to solve their problems. *Professor MacCurdy, Associate Professor Kelley.*

ED 312 Teaching Social Studies in the Secondary School 3 crs.

Prq.: PY 200.

*Assistant Professor Myers.***ED 314 Teaching English in the Secondary School 3 crs.**

Prq.: PY 200.

*Associate Professor Joki.***ED 316 Teaching Earth Science in the Secondary School 3 crs.**

Prq.: PY 200.

*Professor MacCurdy, Associate Professor Boutilier, Mr. Jones.***ED 317 Teaching Geography in the Secondary School 3 crs.**

Prq.: PY 200.

*Professor MacCurdy, Mr. Dillman.***ED 443 Secondary School Curriculum 3 crs.**

Purposes of the modern secondary school and the curriculum needed to implement them: historical origins, modern development, and future possibilities. Planning curriculum guides, participating in evaluations and national curriculum committee work will be stressed. *Professor MacCurdy.*

ED 490 Supervised Teaching in the Public Schools 6 crs.

(See ED 490 under "Department of Elementary Education.") *Associate Professor Francis and Staff.*

DEPARTMENT OF SOCIOLOGY

Professor Joseph Moore, *Chairman*

Professor Morgan Brown

Associate Professor Clay Greene

Assistant Professors: Abraham Thomas, Dorothy Wertz

Required for a Major in Sociology: SO 202, 303, 306, and 400, plus six to eight other courses in Sociology. Additional required course: MA 110.

SO 202 Introduction to Sociology 3 crs.

Social structure, basic human institutions, analysis of social processes, major social forces. *Professor Brown and Staff.*

SO 204 Sociology of Religion 3 crs.

Comparative study of religious systems and institutions, function and role of religion and the church in society; professional status, history and relations of the clergy. *Assistant Professor Thomas.*

SO 303 The Family 3 crs.

Prq.: SO 202, or AN 201, or AN 202.

The family as a social institution in terms of its historical and cultural development. Analysis of psychological and social factors in contemporary family life. *Professor Brown, Associate Professor Greene.*

SO 304 Social Stratification 3 crs.

Prq.: Same as SO 303.

Historical and contemporary examples of the range of stratification systems. Problems of class and caste, conflicts. Trends in class system and social mobility, with special attention given to similarities and differences of modern industrial societies. *Associate Professor Greene, Assistant Professor Thomas.*

SO 305 Sociology of Education 3 crs.

Educative factors in the social process. Some attention will be given to preliterate cultures and the functioning of the dominant institutions. Major emphasis on the relation of stratification to education, and of education to horizontal and vertical mobility. Social class and ethnic backgrounds will be examined for their relationship to the functioning of schools. Recent, well-known empirical findings will be discussed. *Professor Brown.*

SO 306 Urban Sociology 3 crs.

Prq.: SO 202, or ES 353, or AN 201, or AN 202.

A sociological and ecological analysis of the city in terms of urban institutional and personality patterns, folkways and mores. Ecological processes and structures. The city as center of dominance over a trade area and hinterland. *Professor Brown, Associate Professor Greene.*

SO 307 Urban Problems 3 crs.

Prq.: Same as SO 306.

Poverty, intergroup conflict, breakdown in education, crime, delinquency and urban riots will be examined. Special emphasis will be on new approaches in education in the city—decentralization, community control, relevant curriculum. For students preparing for urban teaching. Experience in a problem area will be an integral part of the course. *Associate Professor Greene.*

SO 310 Indian Cultures and Social Organization 3 crs.

Prq.: Same as SO 303.

A descriptive and analytical examination of societies of the Indian subcontinent dealing with their cultural histories, economic, social, political and religious institutions. Problems of cultural and social change. *Assistant Professor Thomas.*

SO 312 Urban Minority Relations 3 crs.

Prq.: Same as SO 306.

A study of the relations between ethnic and racial groups in the United States, with particular attention to the Boston Irish, the Boston Italians, and the Negro-Americans. Concentrations will be upon the Negro in America and the problems of identity. *Professor Brown.*

SO 314 Case Work Methods 3 crs.

Prq.: SO 307.

Case work is based on recognition of internal psychological problems and external social causes of an individual failure to function satisfactorily. Techniques of interviewing. Theoretical study of human behavior. Experience in social work agencies. *Associate Professor Greene.*

SO 316 Social Problems I: Non-Conforming Behavior 3 crs.

Prq.: SO 202.

Contemporary social problems which are reflected in the behavior of individuals, but whose origins and causes lie outside of individuals. Topics treated will include drugs, dope-addiction, crime, juvenile delinquency, divorce and other family problems, mental illness and other health problems, social class, and selected social issues. *Associate Professor Greene.*

SO 318 Social Problems II: Structural Discontinuities and Value Conflicts 3 crs.

Prq.: SO 202, SO 316, or consent of the instructor.

A continuation of Social Problems I. Unemployment, mass poverty, problems of mass communication, world population growth, war, and other major problems involving total societal organizations. Problems will be treated from the standpoint of social change, resulting disorganization, and value conflict. *Associate Professor Greene.*

SO 320 The Sociology of Underdevelopment 3 crs.

Prq.: SO 202, or AN 201.

The study of the "Third World," its kinship, economic, religious, political and international roots, present functions and possible future consequences. *Assistant Professor Thomas.*

SO 400 Seminar: Social Theory 3 crs.

The history of social theory and selected topics in modern social theories, analysis of alternatives conceptual approaches and their methodological requirements. For majors in Sociology or Behavioral Sciences. *Professor Moore and Staff.*

SO 402 Seminar: Research Methods in Sociology 3 crs.

Application of scientific methods to the analysis of social phenomena, methodological orientation in sociology, types of research procedure, nature of sociological variables. For majors in Sociology or Behavioral Sciences. *Professor Brown, Associate Professor Greene.*

DEPARTMENT OF SPEECH AND THEATRE

93

Associate Professor Robert Barnett, *Chairman*

Associate Professors: Karin DuBin, Willis Pitts

Assistant Professors: Lee Dunne, Robert Friedman, Stephen Levine, Richard Warye

Instructor Susan Miskelly

There are three separate and distinct programs available to those students who choose to major in the Speech and Theatre Department. 1) Speech. A course of studies designed to make students aware of oral communication as it occurs in public speaking, small group discussions, interpersonal relationships, and formal debate. 2) Speech Therapy. A series of courses which acquaint the students with the areas of speech and hearing science and offers pre-professional training in speech pathology and audiology. 3) Theatre. A program designed to familiarize students with those subjects related to performance in the theatre and to develop an appreciation for live drama.

Each student must complete not less than 24 and no more than 36 semester hours in his field of concentration. All who choose to major in Speech and Theatre take the following departmental *basic* requirements: ST 200, 210, 340, 370, 410, and 495. In addition, there are courses which are required within the chosen areas of concentration. In Speech: ST 350, 360, 460 and 465; in Speech Therapy: ST 290, 291, 490 and 493; in Theatre: ST 380, 390, 395 and 430.

Eighteen credits are required within the department for a Minor in Speech and Theatre. ST 200, 370 and 410 form the basis of the minor and the additional nine credits must be concentrated in one area of interest.

The Speech and Theatre Department faculty administers an oral speech test to all in-coming freshmen. This test determines which students will enter the speech improvement program. In addition, the College has established minimum voice, articulation, and fluency standards that must be met before a student is allowed to do student teaching. (See ST 001).

ST 001 Speech Improvement

Clinical therapy for students failing to meet minimal speech qualifications for teacher training. No credit. Hours arranged. *Associate Professor Pitts, Assistant Professor Dunne.*

ST 002 Remedial Speech

Practical exercise program conducted in small groups designed to correct voice and speech problems. For students who are recommended by faculty for speech improvement and who are not already taking ST 001. No credit. Hours arranged. *Assistant Professor Dunne.*

ST 200 Oral Communication 3 crs.

Examination of the practical and theoretical aspects of listening, conversation, discussion, interviewing and public speaking. *Associate Professor Barnett and Staff.*

ST 210 Introduction to Speech and Theatre 3 crs.

A review of the several disciplines within the field of speech and theatre. Consideration of career opportunities. *Assistant Professor Friedman and Staff.*

ST 220 Communicative Reasoning 3 crs.

Basic theories of rhetorical logic from Aristotle to Blair, Campbell, Whately, through I. A. Richards. *Miss Miskelly.*

ST 290 Speech Improvement in the Classroom 3 crs.

Voice and hearing mechanism. Voice sounds. Problems and needs of speech-handicapped children. *Associate Professor Pitts.*

ST 291 Phonetics 3 crs.

Speech sound production. The international Phonetic Alphabet and American English. *Associate Professor Pitts.*

ST 310 Oral Interpretation 3 crs.

Oral reading of selected prose, poetry and drama: Individual and group forms. Theory and practice. *Associate Professor DuBin.*

ST 326 Methods of Speech Instruction 3 crs.

Basic problems, objectives and organizational techniques necessary for the effective teacher of speech and theatre. *Associate Professor Barnett.*

ST 330 Creative Dramatics 3 crs.

Development of the child's creative faculties through the use of dramatic play in laboratory sessions as well as classroom activity. *Assistant Professor Dunne.*

ST 350 Public Speaking 3 crs.

Intensive study, evaluation and analysis of speech preparation with frequent presentations of various speech types. *Miss Miskelly.*

ST 360 Group Discussion 3 crs.

Principles of interpersonal communication with stress on participation, leadership, and reasoning. *Miss Miskelly.*

ST 361 Parliamentary Procedure 3 crs.

Principles and practice. Relationship to the conduct of business in clubs, governments and other organizations. *Associate Professor DuBin.*

ST 370 Play Production I 3 crs.

Reading, selection, analysis, and preparation of scripts for presentation. Theory and practice. *Associate Professor Barnett.*

ST 380 Stagecraft 3 crs.

Prq.: ST 370.

Theory and practice of technical theatre production with emphasis on principles of set design, construction, and lighting. Costuming, properties, make-up, and sound. *Assistant Professor Warye.*

ST 385 Stage Lighting 3 crs.

Prq.: ST 370.

Materials and techniques fundamental to historical and contemporary stage lighting; analysis of the principles of design as they relate to contemporary theatre execution. *Assistant Professor Levine.*

ST 390 Principles of Acting 3 crs.

Prq.: ST 370.

Development of appreciation and basic skills in the fundamentals of acting. Exercises, improvisations, and scenes. *Assistant Professor Friedman.*

ST 395 Principles of Directing 3 crs.

Prq.: ST 370.

Basic knowledge and techniques for the beginning director. Play analysis, composition, movement, characterization and rehearsal. *Assistant Professor Friedman.*

ST 400 Creative Techniques for Teaching 3 crs.

Story telling, creative dramatics, role playing, choral speaking, puppets and masks, and other speech arts, and their practical application in teaching various subjects. *Associate Professor Barnett and Staff.*

ST 410 Voice and Diction 3 crs.

Analysis of each student's habits of respiration, phonation, and articulation; exercises designed to correct poor habits. Physics and physiology of the vocal mechanism. Training in perception, differentiation, and production of the standard sounds of good American speech. *Assistant Professor Dunne.*

ST 420 Children's Theatre 3 crs.

Prq.: ST 370.

Theatre for the child audience. Theories applied by assuming responsibility for the production of a play for children on campus and in area schools. *Assistant Professor Warye.*

ST 430 Theatre History 3 crs.

Trends in dramatic and theatrical developments throughout the world, beginning with ancient Greece and concluding with contemporary drama, with special attention to American theatre. *Assistant Professor Levine.*

ST 440 Audiology 3 crs.

Prq.: ST 290, ST 291.

Science of hearing; transmission and measurement of sound to the human ear. Anatomy, physiology, and neurology of hearing mechanism. Related pathological conditions. Not offered in 1970-1971.

ST 450 Communicative Theory 3 crs.

Examination of the communication process: the communicator, message, communicatee and the environment in which a message takes place. Theory and practice. *Associate Professor Barnett.*

ST 460 Argumentation and Debate 3 crs.

The essentials of stating and supporting propositions. Study of forms of debate, and of theories of argument; frequent practice. *Miss Miskelly.*

ST 470 Playwriting 3 crs.

Appreciation of the nature of the play as an art form. Analysis of plays of various types; practice in writing. *Associate Professor DuBin.*

ST 480 Introduction to Television 3 crs.

Television as a medium of communication in society and in the school. Study of the historical development of broadcasting and the current status of the medium. Active participation in developing skills of performance for use as an educator, civic leader, or professional broadcaster. *Assistant Professor Warye.*

ST 485 Directing for Television 3 crs.

Prq.: ST 480.

Principles and skills involved in the production of units or programs for television presentation. *Assistant Professor Warye.*

ST 490 Speech Science 3 crs.

Anatomy and physiology of the speech and hearing mechanism. Background factors of speech disorders. *Associate Professor Pitts.*

ST 495 Speech and Theatre Seminar 3 crs.

Study and application of research methods in the area of speech and theatre, with particular emphasis on the individual student's interests in the discipline. Required of all speech and theatre majors. *Assistant Professor Warye and Staff.*

INTERDEPARTMENTAL PROGRAMS IN NATURAL SCIENCES

The following interdepartmental programs are offered within the Division of Natural Sciences and Mathematics.

CHEMISTRY-GEOLOGY MAJOR

A major in Chemistry-Geology is offered jointly by the Departments of Chemistry and Earth Sciences and Geography. This program is designed to prepare students for graduate school and professional employment in geochemistry and geology. Careers in these fields may involve petroleum, mineral and groundwater exploration, or research in geochronology, minerology, crystallography and oceanography. This major is particularly suited to students interested in chemical or geological oceanography. The program is

flexible in that it allows the student to specialize in a variety of areas by suitable choice of electives.

Chemistry-Geology majors are required to take the following courses: CH 141, 142 (or CH 131, 132); ES 181, 192, 372. In addition to the above requirements, majors must elect a minimum of two additional semesters of chemistry, two semesters of physics, and two semesters of mathematics. In addition to these electives the student must elect a minimum of six hours of chemistry, earth sciences, mathematics, or physics which have been approved by the student's advisor.

PRE-MEDICAL AND PRE-DENTAL PROGRAMS

Medicine

Although medical schools do not require a major in a particular discipline, they expect applicants to have achieved high academic standing in the fields of biology, chemistry, physics, mathematics, English, and foreign languages. Most students who plan to enter medicine as a profession will find it advisable to major in either biology or chemistry. A student who is interested in medicine should consult both his major advisor and a member of the Pre-medical and Pre-dental Committee early in his freshman year.

Dentistry

While some dental schools admit applicants after three years of college work, most prefer students with a bachelor's degree. As in medicine, there is no requirement for a major in a particular discipline. Most students who plan to enter dentistry as a profession will find it advisable to major in either biology or chemistry. Applicants for dental school should meet the requirements of the major in a given department and must also satisfy the requirements in biology, chemistry, physics, and English as set by each dental school. A student who is interested in dentistry should consult both his major advisor and a member of the Pre-medical and Pre-dental Committee early in his freshman year. Pre-medical and Pre-dental Committee: Wilmon Chipman (Chairman), Kenneth Howe, Walter Morin, Henry Daley.

PROGRAMS IN OCEANOGRAPHY

Programs in oceanography are offered as a cooperative effort of all departments within the Division of Natural Sciences and Mathematics. These programs are designed to prepare students for graduate school or professional employment in oceanography.

Most graduate schools of oceanography require an undergraduate major in biology, chemistry, earth sciences, or physics. All students interested in an oceanography program should major in one of these disciplines. Graduate

schools of oceanography expect students to include the following courses in their undergraduate programs: Calculus I and II, Inorganic Chemistry and Qualitative Analysis or General Chemistry, General Physics or Elements of Physics, Quantitative Analysis, General Botany, General Zoology, Physical Geology, and Introduction to Oceanography I and II.

These courses, together with one of the majors indicated above, provide a basic foundation for further study in one of the four principal branches of oceanography, i.e.: biological oceanography, chemical oceanography, geological oceanography, and physical oceanography. Additional courses in related areas may be selected by the student with the approval of his major adviser. A student who is interested in oceanography should consult both his major adviser and a member of the Advisory Committee on Oceanography during his freshman year. Advisory Committee on Oceanography: Elizabeth Cirino (Chairman), Robert Boutilier.



Absences from Class

Faculty members keep accurate attendance records for all students since these are needed for many purposes both legal and advisory. It is the responsibility of each faculty member at the beginning of each course to explain to the student his policy on attendance, particularly what he considers as excessive absence.

Probationary students and first semester freshmen are allowed no unexcused absences.

When the faculty member considers a student's absence excessive, the case is reported to the Division of Student Personnel. Conferences are held with the student to determine the cause of absences. Reports of these conferences are sent to the professor.

If the student involved is on probation, a report of these conferences is presented to the Academic Dean and the Academic Standing Committee. No student is denied examination privileges. However, an absence report may be the determining factor in the separation of a borderline student from the College.

Make-up Tests and Examinations

Make-up programs for periodic tests or quizzes are determined by each department. The privilege of making up mid-year or final examinations is granted only upon the receipt of a doctor's certificate or other valid excuses by the Academic Dean, the Division of Student Personnel, or the instructor.

The only excusing cause of absence from a semester examination is serious illness of a student or a member of his immediate family. All absence excuses must be documented and submitted to the Academic Dean for approval.

Absences in Student Teaching

Juniors should report cases of unavoidable absence to the principal of the laboratory school before the beginning of the morning session.

Seniors doing their student teaching are to observe the rules which govern the attendance of teachers in the school system to which they are appointed. They must ask permission of the supervisors before obtaining permission of the superintendent of schools or the principal in cases of desired absence. In case of unavoidable absence, the principal or the superintendent of schools should be notified before the morning session begins. They must notify promptly the supervisors from the College in case of absence or a "no school" session on days of the week assigned for supervision.

Student Responsibilities

All freshmen, and all upperclass students on academic probation must file an absence slip for every absence in the Office of Student Personnel before returning to classes.

It is the responsibility of all students to fulfill the requirements of all courses in which they are enrolled, including specifically making up any class work they have missed because of absences. An absence on the day a paper or project is due does not relieve the student of his obligations. The paper must be postmarked on the day due or passed in by a classmate.

Permission for a make-up quiz or make-up examination will normally be granted at the discretion of the instructor only upon receipt of a legitimate excuse for the absence. If a student misses a quiz or an examination it is his responsibility to furnish the instructor with sufficient evidence for his absence to avoid receiving a failing grade for that examination or quiz.

Absence for official college business, sports, conferences, etc. is permitted but responsibilities referred to above are in effect.

If an instructor does not appear for any scheduled class, the students are expected to wait ten minutes, sign an attendance list, and elect one member of the class to submit this list to the Chairman of the Department.

Alcoholic Beverages and Illegal Drugs

The use or possession of alcoholic beverages or illegal drugs on the campus is sufficient reason for expulsion from the college.

Social Conduct

The administration reserves the right to exclude from College activities any student or guest whose social conduct is inappropriate to the educational processes of the College.

Disciplinary Suspension Procedures

The Deans of the College review all charges and pertinent information concerning the particular case. This information may be submitted by student officers or other members of the College community. Based on this data a recommendation for suspension is presented to the President of the College. The President then reviews the case and forms an independent judgment on the basis of all the facts available.

Recommendations for suspension are usually made in cases of students already on a disciplinary probation status or after behavior which has seriously threatened the safety and security of other students. In all other cases of misconduct students are placed on disciplinary probation and their parents are notified. If the reasons for dismissal are not heinously offensive, students are permitted to voluntarily withdraw from the College.

The following traffic policies were adopted to facilitate vehicular movement and provide the safety of all persons using the campus of the College.

I. Campus Parking

A. Student Parking

1. Dormitory students living on the lower campus must park their cars directly behind the Burnell School playground.
2. Dormitory students living on Great Hill must park their cars in the Great Hill parking lot.
3. Junior and Senior commuting students must park their cars in the large gymnasium parking lot.
4. Freshmen and Sophomore commuting students must park their cars in the Great Hill parking lot.

B. Faculty and Staff Parking

1. The area behind Boyden Hall is reserved for the administration, faculty, and staff who have offices in that building.
2. Cedar Street (behind Boyden Hall).
3. At the side of Woodward Hall:
 - a. Grove Street to hydrant (reserved for Burnell School Faculty);
 - b. From the hydrant to the old boiler room is reserved for non-teaching personnel.
4. Area behind the Men's Dormitory, Pope Hall, and Tillinghast Hall is reserved for personnel involved with these buildings.
5. The area adjacent to the Library is reserved for the faculty and staff who have offices in that building.
6. The area to the right of the Gymnasium is reserved for faculty who have offices in that building.
7. The area behind the Science Building has been assigned and is reserved for administration, faculty and staff who have offices in that building.

II. Violations and Penalties

- A. First violation—\$1.00 fine.
- B. Second and subsequent violations—\$5.00 fine per violation.
- C. Any student receiving a ticket recording a parking violation must report to the Office of Traffic Control which is located in the building to the rear of Woodward Hall. The office is open from 11:00 a.m. until 1:00 p.m.—Monday through Friday. The office will be closed during vacation periods.
- D. Fines are due one week after the violation has been recorded.

- E. Failure to pay these fines will result in the withholding of all grades, credits and transcripts.
- F. Freshmen dormitory students are not allowed to have motor vehicles on campus.

III. Registration

- A. Students must register every motor vehicle used for transportation to and from the campus.
- B. A fee of \$1.00 is charged for registration of each vehicle and a decal is issued for each vehicle.
- C. Decals issued during September of 1970 are valid until September 1, 1971.
- D. All decals issued prior to September 1, 1970 have expired.
- E. Decals issued between September 1, 1970 and August 31, 1971 expire September 1, 1971.
- F. Decals are to be placed on the vent window on the driver's side of the car.
- G. The letter "R" designating residence student should be placed on the vent window, driver's side.
- H. Decals are to be placed in a conspicuous spot on all motor bikes.

STUDENT SERVICES

Students have problems and needs that often require special forms of help or personal guidance at different stages of college experience. Among these are questions and concerns about one's educational program and academic achievement, housing, finances, health, social adjustment, part-time work, and post-college study or employment.

To assist students in making adjustments, wise decisions, and intelligent plans, the College has provided professional staff services in the major areas of student needs.

Orientation

During a freshmen convocation in the summer and during registration week, the orientation of students new to Bridgewater State College begins. Students are then advised on their academic program and given opportunities to meet each other and the faculty. They learn about the philosophy and resources, the standards, requirements, policies, and traditions of the College. The program includes assemblies, discussion meetings, activities of various kinds, and get-togethers in informal settings, planned and carried out by committees composed of students, faculty, and administrative staff.

An orientation course for all freshmen is required with class meetings once a week throughout the first semester of the college year.

The faculty-student relationship is the center of college counseling, for it is the faculty who are best qualified to guide the student in his academic and professional growth. Each freshman is assigned to a faculty adviser. Additional guidance by a professional counselor may be arranged through the office of the Dean of Students.

Academic Counseling

The Faculty Committee on Academic Standing also offers counseling services. It interviews students whose academic standing is unsatisfactory at the end of each semester to determine the probability of success if the student is allowed to continue. To those students dismissed for academic reasons, the Committee frequently offers suggestions for other academic or vocational preparation.



Cultural and Social Events

The opportunities provided for cultural and social experiences, through formal and informal group activities, include musicales, art exhibits, international displays, forums, socials, informal dances and formal balls, coffee hours with staff and faculty, and residence hall functions. The Assembly Committee of the Student Government Association sponsors a program series each year. Student, faculty, administrative, and alumni groups also sponsor lectures, forums, and discussion groups throughout the year. The Bridgewater Celebrities Series brings internationally recognized artists to the campus several times each year.

Physical Education and Recreation

The physical education and recreational program of the college provides a wide range of activity for students. Objectives of the program are to promote qualities of leadership and sportsmanship; to aid students in their emotional, physical, and social development; and to provide opportunities for the development of individual physical skills. Programs of intramural sports for women are conducted in badminton, basketball, bowling, dancing, field hockey, golf, lacrosse, riding, and swimming. Varsity teams in lacrosse, basketball, field hockey, softball, tennis, and bowling compete with teams from other women's colleges in eastern New England.



Intercollegiate athletics play an important part in the College's educational objectives. Sports are vital and beneficial activities, creating proper balance between mental and physical training, providing relaxation and enjoyment for student participants and student spectators, developing a spirit of unity and high morale in the student body, and encouraging cooperative group relationships. Bridgewater participates in intercollegiate football, cross country, basketball, swimming, baseball, tennis, track, and golf.

Health Services

A hospital suite is located on the first floor of the S. Elizabeth Pope Hall. The services of a nurse are available to all students of the college twenty-four hours each day, seven days a week. A doctor is on duty three days a week for four hours each day.

Vocational Placement Service

The Placement Service assists in referring seniors to employers for full-time job opportunities, and in placing alumni in their major fields of concentration. In addition, on-campus interviews are arranged for students in their senior year. These services are available without charge to all students and alumni who register at the Guidance Office.

Student Employment

Opportunities for part-time employment are available for students who wish to earn money while studying at the college. Applications should be made to the Guidance Office. Assignments are made in accordance with the needs, abilities, and interests of the students.

Student Bookstore

The Bookstore is open weekdays from 8:15 a.m. to 4 p.m., and Monday through Thursday from 4:30 p.m. to 8 p.m.

Books may be paid for by cash or check. All checks should be made payable to: STUDENT BOOKSTORE, INC., with the student's home address appearing on the check. The store does not handle used books. Books may be returned to the Bookstore for the following reasons only, if the book is defective, or if the course is dropped or cancelled before the date specified by the Bookstore Manager. Returned books must be unmarked, in saleable condition, and accompanied by Bookstore sales receipt.

In addition to textbooks the store stocks a complete line of supplies and study guides. The supplementary reading titles are being increased as space permits.

THE CLEMENT C. MAXWELL LIBRARY

The modern college library is seen not merely as a storehouse for books and other instructional media but also as an active participant in the great adventure of learning. The library is a huge classroom for the campus. Librarians work with the same commitment as teaching faculty—with dedication to the aims and objectives of higher education and to each individual student involved in the process.

The Clement C. Maxwell Library, named for that president of Bridgewater State College incumbent from 1951 to 1962, is presently housed in a former gymnasium pre-empted to provide for the proliferating collection which complements the expanding curriculum. Ground has been broken nearby for a modern learning resource center which will be the new home for the Maxwell Library in 1971, and in which all the media for learning will become freely accessible to students, with librarians and other personnel aiding and instructing in meaningful library use.

It is the philosophy of the library administration to establish a climate for learning in the Maxwell Library in which service to students is seen as the first responsibility. Empathy for the students and the problems involved in the reading and research in their studies results in an emphasis on teaching-librarianship, on helping with the processes of inquiry rather than of mere



acquisition of knowledge. This proceeds from the provision of materials sought to an interpretation of materials available, to suggestions for priorities in use, and to recommendations for breadth of coverage through many kinds of materials—not the book alone.

The Maxwell Library contains about 65,000 volumes and subscribes to over 840 periodicals and newspapers. These are supplemented by microfilm and microfiche holdings and the viewers and reader-printers necessary to utilize them. The library subscribes to all ERIC services, the nation-wide pooling of all information relating to education and allied social sciences by the computerized Educational Resources Information Center. Indexes and abstracts are available in the library in many specialized areas to support the needs of the curriculum. The large reference collection is interdisciplinary and the library administration is receptive to suggestions for improving or enlarging it to meet college goals.

Within the library, a curriculum center is developing to support particular needs of both teachers in training and teachers in the field. It is intended that this become an area center for the education student, a pacesetter in curriculum development, and an interpreter of current trends and research in education.

Other special features of the library include a fine collection of childrens' books, of Bridgewaterana, and the newly-donated Dickens collection willed to the library by Dr. Maxwell.

Accessibility to materials is enhanced by having all books and reference volumes in open stacks; by interlibrary loan cooperation between this college, Wheaton College, Southeastern Massachusetts University, and Stonehill College; by a centralized integrated card catalog; by the presence from 8 a.m. to 10 p.m. of a professional librarian to assist with reference problems; and by having the circulation desk, or library nerve-center, centrally located as a base for communication.

The study atmosphere of the library is supported by the availability of individual study carrels to facilitate quiet research. Study tables for groups of four are also available in an area adjacent to the reference collection.

It is the aim of the library to present a collection which is viable, which meets the present needs of higher education as expressed by the various curricula at the college. Books are selected carefully by the librarian in consultation with his professional staff and with attention to the expressed needs of the faculty. Evaluation of the collection in terms of breadth, depth, and balance is an on-going process, and weeding is carried out at regular intervals. The specific quantity of books and other media is considered of less importance than the view of having enough to interpret all college programs and of ensuring that the collection be qualitative and relevant.

The library is open and its collection therefore accessible as many hours of the week as resources and use patterns support. Fullest operation is during the week, but the library is also open on weekends within the above limitations. Vacation hours and scheduling during examinations or periods of emergency, such as New England snowstorms, are determined by the librarian and are posted and announced as soon as possible.



THE CAMPUS

Bridgewater State College is located just east of Central Square in Bridgewater, Massachusetts, off Routes 18, 28, and 104. At present the 200-acre campus contains 19 buildings with a College Center to be completed by September, 1970. A library and an educational facilities building are in the planning stages.

Gates House, on the corner of Grove and Cedar Streets, has been the home of presidents of the college since 1933. It is now the home of President and Mrs. Adrian Rondileau.

The Martha M. Burnell School, on Grove Street facing the quadrangle, is the laboratory school for Bridgewater students pursuing the Bachelor of Science in Education curriculum. The school provides four grades and a

kindergarten where juniors do their student teaching under supervision. On the ground floor is a lounge where teachers may relax during their free time. The laboratory school is often visited by classes from the college, who observe demonstration lessons taught by the Burnell School faculty.

Also on Grove Street, next to the Burnell School is Woodward Hall, named for Eliza Woodward, a beloved teacher who served the college for many years. This large dormitory houses over two-hundred women students. It has three floors containing eighty-five double and triple rooms. On the first floor are located the office of the Assistant to the Dean of Women, a music room, and a reception room. On the ground floor is a kitchenette, ironing room, recreation room, laundry room, and study hall.

At the corner of Summer and Grove Streets is the Men's Dormitory, a modern brick building which accommodates about one hundred young men. Between the Men's Residence and Park Avenue is the area called Lower Campus, which contains the College tennis courts. In this area is the new campus center.

The first building on Park Avenue is the S. Elizabeth Pope Hall, named for a former Dean of Women. This residence contains all double rooms and houses one hundred and fourteen women students. The college infirmary is on the first floor of this building, which also contains a modern reception area for entertaining guests. On the ground floor are laundry facilities, a combination lounge and study hall, and a cafeteria.

Next to Pope Hall is the Stevens Greenhouse and Botanical Gardens, located on land donated by Mrs. Elizabeth Stevens. Many rare and interesting plants are found in the greenhouse. The surrounding gardens contain a small goldfish pond and picnic area for use by campus organizations.

Next to the Greenhouse is the Marshall Conant Science Building, a three-story structure which contains classrooms, laboratories, a lecture hall, and private offices for members of the science faculties.

Also on Park Avenue is the John J. Kelly Gymnasium, which contains two gyms, the swimming pool, showers and locker space for both men and women students, classrooms, and the offices of the faculty of the departments of Health and Physical Education. Next to the Gymnasium is a large parking lot for commuting students.

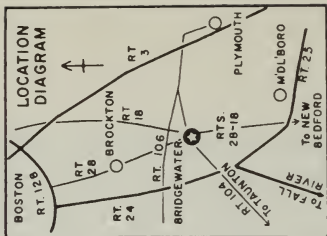
On School Street facing the quadrangle is the Clement C. Maxwell Library, which contains sixty-five thousand volumes. There are student carrels, a reading room which also houses reference material, and a lounge for the faculty.

At the corner of the quadrangle on the corner of Summer and School Streets is Tillinghast Hall, named for Nicholas Tillinghast, the first principal of the Normal School. The rooms in this women's residence are singles, with



BRIDGEWATER STATE COLLEGE

ATHLETIC FIELDS



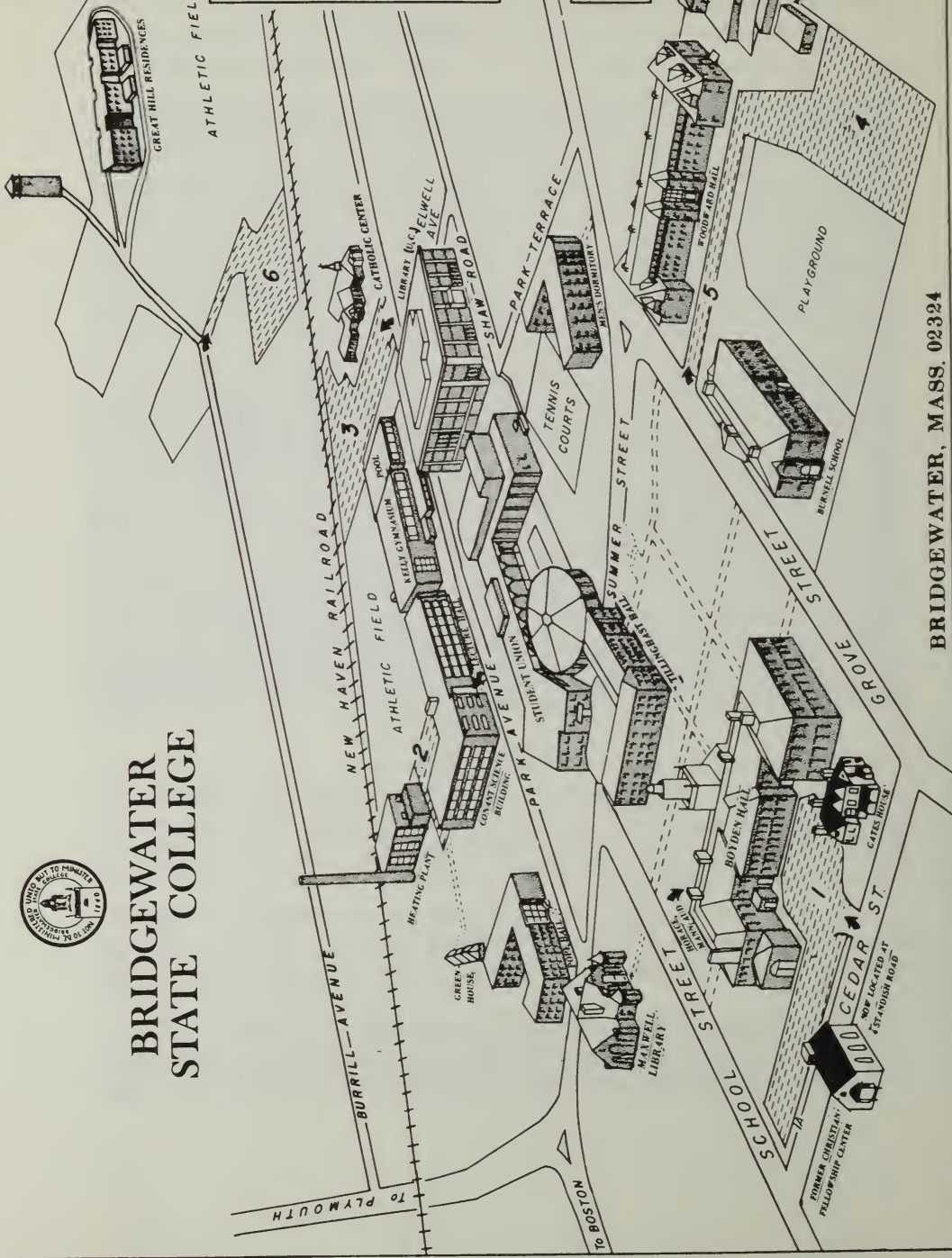
PARKING AREAS



- 1 BODDEN HALL LOT
- 1A CEDAR ST. LOT
- 2 SCIENCE BLDG. LOT
- 3 GYMNASIUM LOT
- 4 WOODWARD HALL LOT
- 5 BURNELL SCHOOL LOT
- 6 GREAT HILL LOT

H. F. HIRT, 1967, 1969

BRIDGEWATER, MASS. 02324



the exception of two suites. The spacious reception room on the first floor is used by the students for entertaining guests and for teas, meetings, and social functions of many kinds. On the same floor is found the college dining hall for dormitory students who live on the lower campus. On the ground floor is a reception room for students, the student post office, laundry facilities, some faculty offices, a new music room, and a suite which houses the Alumni Office.

September, 1967 saw the opening of the new high-rise residences on Great Hill. Three hundred women and three hundred men occupy these modern dormitories. The lower floor of each building contains reception rooms, a conference room, a music room, a post office, a laundry room, and a vending machine room. A cafeteria for the use of both men and women is located in the men's residence hall.

The administrative building of the campus is Boyden Hall, also known as the "Ad Building." All administrative offices are found here, as well as many faculty offices and classrooms. Facilities for the use of commuting students, lunch rooms, and locker rooms are located on the ground floor. The Horace Mann Auditorium, in which plays, concerts, lectures, and convocations are held, is in the northeast section of the building.

New Campus "Center"

The varied social and cultural activities of the campus will be housed in the new "Center" building when it opens in the fall-winter of 1970. This six-million dollar structure is divided into three areas: the main Center building, the theatre wing, and the cafeteria wing. Within the main building itself can be found study rooms, main lounge areas, a music lounge, a browsing lounge, a conference-reception room capable of handling nine-hundred people for dinner, dancing, or conferences, a snack bar seating one hundred and fifty, a fifty-seat faculty-lounge-dining room, a conference gallery, and conference rooms. The theatre wing houses a one-thousand five-hundred seat theatre with dressing rooms, shop area and costume room, a "green" room, a T.V. studio, a radio studio, a band-rehearsal room, listening booths and offices, and classrooms for Speech and Theatre. In the cafeteria wing are located a seven-hundred-and-fifty seat cafeteria-dining room, a Student Government room, a card room, and a game room (for pool and ping-pong), offices for the various campus organizations, a book store, and kitchen. The center should open officially the first semester of the 1970-1971 academic year.

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OWEN THOMAS PAUL MCGOWAN, M.S. IN L.S.

Librarian

113

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Financial Aid Officer

EDWARD GEORGE ELIAS, M.ED.

Grant Coordinator

MARTHA RANKIN DRINKWATER, B.S.

Assistant to the Dean of Women

GENEVIEVE MARY ASH, M.A.

Resident Counselor to Women

ALBERT J. PETITPAS, B.A.

Resident Counselor to Men

Alumni Office

SARA ELIZABETH POPE, M.A., M.S.

*Executive Secretary to the
Alumni Association*



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Absences from Class	99
Absences from student teaching	99
Administrative Officers	112-113
Admissions	
notification of	13-14
requirements	12-13
transfer students	14
Alumni Office	113
Anthropology, Department of	28-31
Art, Department of	32-34
Athletics	105
Biological Sciences, Department of	34-37
Board of Trustees	129
Bookstore	105
Burnell School Faculty	126-127
Calendar, Academic	6-7
Chemistry, Department of	38-41
Chemistry-Geology Major	96-97
College Entrance Examination Board Tests	12-13
Counseling	
academic	103
general	103
Course Loads	20
Course Numbering System	28
Dean's List	21
Degree Requirements	
Bachelor of Arts	23-24
Bachelor of Science in Elementary Education	25
Bachelor of Science in Health and Physical Education for Women	26-27
Disciplinary Probation: <i>see</i> Probation	
Dismissal, Academic	20
Dormitories	
expenses	15-16
placement	14
Earth Sciences, Department of	41-46
Economics, Department of	46
Educational Services, Department of	46-48
Elementary Education, Department of	48-50
English, Department of	50-55
Expenses	15-17
registration fee	15
tuition	15
Examinations and Tests, Make-up	99

Faculty	114-126
Financial Aid	17-18
Employment	105
French: <i>see</i> Modern Foreign Languages	
Geography: <i>see</i> Earth Sciences	
German: <i>see</i> Modern Foreign Languages	
Grading System	18-19
Graduation Requirements	18
History, Department of	62-66
History of the College	9-11
Health and Physical Education for Men, Department of	55-56
Health and Physical Education for Women, Department of	57-61
Health Services	105
Honors, Graduation	21
Honors Program	21
Humanities Elective	55
Instructional Media, Department of	66-67
Italian: <i>see</i> Modern Foreign Languages	
Laboratory Instructors	126
Library	24, 106-108
Library Science, Department of	67-68
Loans and Financial Aid	17-18
college work study program	17
education opportunity grants	17
national defense student loan program	17
Map of Campus	110
Mathematics, Department of	68-72
Minor Fields of Concentration	24
Modern Foreign Languages, Department of	72-78
Music, Department of	79-82
Non-Discrimination Policy	14
Objectives: <i>see</i> Purpose	
Oceanography	97-98
Orientation	102
Parking	101-102
Philosophy, Department of	82-83
Physics, Department of	83-86
Placement	105
Plagiarism	19
Political Science, Department of	86
Portuguese: <i>see</i> Modern Foreign Languages	

132	Pre-Dental Program	97
	Pre-Medical Program	97
	Prerequisites	28
	Probation, Academic	20
	Probation, Disciplinary	100
	Psychology, Department of	86-89
	Purpose	8
	Re-admission	20-21
	Recreation	104
	Residence Halls: <i>see</i> Dormitories	
	Russian: <i>see</i> Modern Foreign Languages	
	Secondary Education, Department of	89-90
	Sociology, Department of	90-92
	Spanish: <i>see</i> Modern Foreign Languages	
	Special Students	20
	Speech and Theatre, Department of	93-96
	Suspension from the College	100
	Transfer of Credit after Admission	20
	Transfer Students: <i>see</i> Admissions	
	Tuition: <i>see</i> Expenses	
	Warning Notices	20
	Withdrawal from the College	20-21
	Withdrawal from Courses	19

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